"*But sing high and aloof,*
Safe from the wolf's black jaw and the dull ass's hoof."
BEN JONSON, Underwoods.

"*Et tanquam in specula positus, videre mecum soleo.*"
BURTON, Anat. of Melancholy.

"*Gentle Reader!*

"*Lo, here a Camera Obscura is presented to thy view, in which are lights and shades dancing on a whited canvas, aud magnified into apparent life! If thou art perfectly at leisure for such trivial amusement, walk in, and view the wonders of my Inchanted Garden.*"

DARWIN, Loves of the Plants.

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PREFACE.

IMAGINE a huge wooded ridge of trap and gravel, fronting the rising sun and the sea, some three miles long and between two and three hundred feet high, bearing upon its broad back orchards and farms and villas, and bird-haunted meadows and groves, lazily turning windmills, springs of sweet water, and old winding lanes full of mints and flowers, berries, wild cherries, and ferns,—a natural pleasance in which that gray aborigine, the woodchuck, the crafty red fox, the red and gray squirrel, the sooty crow, and all the songster birds find their homes and fight their battles for existence.

Think of this broad ridge as connected by a lonely country road, nine miles long, with the town of Emerson and Thoreau, and as sloping down southward through an old forest to cool its heels in a pretty brook, that, after its leap over the rocks, ripples along by the foot of a glacier kame, or "horseback," out of which tower gigantic oaks that were trees of goodly size before the landing of the Pilgrims.

For outlook oceanward and Europe-ward, picture to yourself in the foreground a rolling plain, diverging, fan-shaped, to the sea, the segment of a mighty circle whose chord is the ridge, whose arc sweeps a curve of twenty miles, from Longfellow's Nahant to the Blue Hills of Milton. The spread of landscape within these bounds is threaded by winding rivers and

alluvial plains, is dotted by blue lakes, and crossed by city-sprinkled ridges. Burnished with the silver sun of morning, the lakes seem holes in the green earth-crust through which the white fire breaks from underground; or is the world-floor but a many colored flying carpet, with the sunlight shining through its rents? By night, instead of Portia's candle, sending its pencil of light afar, you shall see the imprisoned lightning flaming in a thousand lamps, whose combined radiance at the distance of five or six miles is just about equal in power to that of the moon at the end of her first quarter. It splashes the tree-trunks with silver and hangs above the sleeping cities a delicate veil of penumbral light, hailed with joy by the belated pedestrian in the country long before the city itself sparkles on his sight.

If, now, you will conceive of a little red gabled cottage high up on the aforesaid ridge, and peeping forth from a verdurous earth-wrinkle thereof, — a sort of Liliputian farm that is steeped in profound silence from New Year's Day to New Year's Day (bating the distant noise of trains and the voices of squirrels and birds), and whose live stock consists solely of said squirrels and birds, with two or three hundred thousand spiders and ants and such small game, — you will have a tolerably fair notion both of the birthplace of these chapters and of the poetic aspects of this rustic landscape, — gardens where the richest roses bloom, upon whose banks of violets the moonlight sleeps as sweet as ever Shakspere saw it; and where the lawns and copses are haunted, if not by Italian nightingales, yet by birds as rare or blithe of song: the wood-thrush with his tender hymn; the loud-carolling mock-thrush; the meadow lark with plaintive-sweet whistle; the wren with bubbling song; the shy and hidden veery, making the silent marsh-groves ring in the gloaming as he utters his tremu-

lous cry; and that master of flute melody and clashing cymbals, the incomparable bobolink, lord of the sunny meadow.

My notes on this region, covering many years, with their accretions of suggested topics, have grown into a book, which resembles a box of kineto-phonographic records in that it contains views and voices of living things, — rooted, a-wing, or afoot, — each section independent of the others. And let the initial chapter on sweet odors be as a grain of ambergris or musk to perfume the whole, so that it may be said,

"The box-lid is but perceptibly open'd, nevertheless the perfume pours copiously out of the whole box."

For all the illustrations in the volume, except the title-page vignette, I am indebted to the courtesy of Mr. W. Lyman Underwood. They are reproduced from photographs taken by him. The owls, squirrel, young humming-birds, and muskrat are from an original collection of photographs of animal life he is making. One of the curiosities of his work this summer were negatives of a female yellow-throated vireo taken near its nest in a neighbor's apple-tree, the bird perched on the proprietor's hand or eating from a little box on his head.

In the Appendix, dealing with bird songs and calls, I have attempted to supply some of the numerous and annoying deficiencies of the books in this matter. By the aid of my tabular list alone, a beginner ought to be able to identify many a bird; though of course he will want his ornithological hand-book, too, and the Appendix may serve as a supplement to that.

W. S. K.

July 17, 1897.

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IN PORTIA'S GARDENS.

I.

SWEET-BRIER AND WILD CHERRY.

To pack as much sunshine and happiness into each twenty-four hours as is consistent with the exercise of every virtue and every duty, — do you know a better guide for the conduct of life than that? Goethe said to Eckermann, "In my seventy-fifth year I may say that I have never had four weeks of genuine pleasure." And the Caliph Abdalrahman of Cordova wrote (I find it in Gibbon's fifth volume, fifty-second chapter) that, after having diligently numbered the days of pure and genuine happiness which had fallen to his lot, he found they amounted to only fourteen. One could imagine a ruler might have little real happiness, but that a poet could extract only four weeks' happiness from a lifetime is impossible. Indeed, Goethe contradicts himself; for in the very next sentence but one he says, "What really made me happy was my poetic mind, my creative power." So Landor confesses that in writing his works his pleasure

was in the conception and formation: "Excitement, not hope; interior glory, not external, — animated and sustained me."

What Goethe meant by happiness was doubtless that super-essential attar of joy which is inhaled so seldom by the sensitive idealist. The days, weeks, months, years, of most of us, are mottled pretty uniformly with a tolerable article of pleasure, which we are very glad to get and no questions asked.

To be happy, one must be guileless and receptive. "I must inform you," cries Landor's Messer Francesco, "that Father Fontesecco has the heart of a flower: it feels nothing, wants nothing; it is pure and simple, and full of its own little light."

Now, after many shrewd brushes by the way, and some pleasant acquaintance with nature by mountain, stream, and sea, I have for the nonce come to the delicate plain called Ease. But, as you remember, Bunyan says that plain was but narrow, and so they were soon got over it. I will, then, at once fortify myself with the loaf of bread, bottle of wine, cluster of raisins, and other viands now in the cupboard, and buckle down to the business in hand. My task shall be to imitate the old Schildbürgers, who, it is jestingly said, attempted to carry darkness out of a house by capfuls and empty it into the sunshine, which they brought back to fill all the rooms with. They were not such fools after all, — those German wise men of Gotham.

I suppose the two most exquisite things in the world, as joy-begetters, are natural perfumes

and birds' voices, set (both) against a foil of twilight or dawn. For perfumes and bird-songs are sweetest and most intense at set or rise of sun. And all three groups of things are tangled together, — the jangle of voices and the threads and wafts of incense from the flowers rising and mingling in the world's revolving aureole of sunsets and sunrises that ever edges the hemisphere of night with a ring of cloud-tableaux shot through with purple and crimson and gold. To be up among the roses at five o'clock on a dewy morning, "long erst ere pryme rong of any bell," is to have a sip from the cool fountain of Trevi; that is, you are sure to return for another draught.

Sweet odors are closely affined to the soul of love in us, and noxious smells and poisonous exhalations to the soul of hate. Perfumes are the breath of the gods. The woodsy freshness of the mayflower, or epigæa, as you gather it, suggests the breath of a sleeping dryad or of the Greek youth Narcissus or Hyacinthus. It has pungency and earthiness as of a new-turned furrow. But it is too near the primitive essence of things to be compared with anything else. Were you ever up at three o'clock in the morning to catch the rich dewy wafts of odor from a field of ripe wheat in some great river-bottom ranch of the West? Have you drank in again and again at the nostrils the smell of the just-tasselling Indian corn or the airs blowing from off a field of deep red clover?

What a luxurious life that of a bee on a Nile honey-boat, in the season of springing life! —

floating slowly down from Upper Egypt day by day, and every day the excitement of new scenes, infinite store of ever new flowers, exploring a thousand fairy bowers, hanging in scented bells or ranging through delicate azure air over fragrant meads, and at night safe in the busy hive. And so on and down, the boat sinking deeper and deeper into the water from its weight of honey, until it reaches its goal. Who wouldn't be a bee to have such a voyage as that? To this a berth on a Cunarder is like a fosse of Malebolge in the City of Dis.

It must be delicious and invigorating to live in the vicinage of Nîmes, Cannes, Nice, or Grasse, in the sunny valleys of Southern France, and inhale the air blowing off of square miles of lavender, rosemary, thyme, and roses in the summer months.

We always knew that fragrances were health-giving, and an Italian scientist has recently told us why. He finds that hyacinth, heliotrope, mignonette, lily-of-the-valley, cherry, laurel, cloves and lavender, mint, juniper, lemon, fennel, and bergamot are especially healthful, for they contain a deal of vitalizing ozone. The sprinkling of the essence of cedrat in a sick-room has restored dying persons to health. In a bad season bees will resort to poisonous and bad-smelling flowers for nectar, but never in a good season. (It is a curious thing that bees smell with the ends of their fingers.) What we get of most value in the country, physicians say, are the sweet odors and the pure air. "Odoraments to smell to, of rose-water, violet-flowers,

balm, rose-cakes, vinegar, etc.," says old Robert Burton, author of the "Anatomy of Melancholy," "do much recreate the brains and spirits"; and his namesake, the late Oriental scholar, Sir Richard, says that the Egyptians believe that the rich-scented yellow-white blossoms of the acacia, or mimosa, are a fosterer of love, and from them they prepare an aphrodisiac perfume. Robert B. goes on to say that "it is a question commonly controverted in our schools *an odores nutriant*, whether odors nourish or not," and tells of his model Democritus, the laughing philosopher, who lived for several days by the smell alone of bread. Odors do indeed nourish, for it is known they are made up of solid particles given off from the fragrant substance.

I should say that persons living in the vicinity of chocolate factories, and inhaling the delicious fragrance streaming around, must receive, day in and day out, very considerable nourishment into the blood through the nostrils by absorption, although the separate particles of odor are often less than the millionth part of an inch in diameter.

"One day a friend of mine," says Saadi, "put into my hand a piece of scented clay. I took it, and said to it, 'Art thou of heaven or earth, for I am charmed with thy delightful scent?' It answered, 'I was a despicable piece of clay; but I was some time in company of the rose: the sweet quality of my companion was communicated to me; otherwise I should have remained only what I appear to be, — a bit of earth.' "

What mysterious stimulus to the nerves does the rose give, that it so delights us above other flowers? Anybody can smell a rose properly, our cultivated varieties have such an abundance of odor; but few know how rightly to inhale the perfume of the more delicate flowers. The idea should be to capture "the fine fugitive first of all" aroma by the slightest and most delicate possible of inhalations. The sensory nerves of smell can be dilated and contracted at pleasure, like those of sight. If you linger a fraction of a second too long, or jam your nose down into the petals, you will rue it; for you get, usually, the rank scent of the petals or leaves, — a very different thing from the delicious essence secreted by the glands at the base of the stamens and pistil. Besides, it is too bad to rob the flower of all. Can we attain the delicacy of soul of Landor (I confess it is difficult for me), and say, —

> "The violet's head
> Hath shaken with my breath upon its bank,
> And not reproached me; the ever-sacred cup
> Of the pure lily hath between my hands
> Felt safe, unsoiled, nor lost one grain of gold"?

Some people have no sense of smell at all, — not to speak of. *Non cuique datum est habere nasum*, — It is not given to every one to have a nose, — runs the old saying. In others the faculty is very keen. A Wilmington (N.C.) post-office clerk could, by the sense of smell alone, pick out of a pile of hundreds of letters every one that had a bank-note in it. Blumenthal tells of a man, with otherwise normal sense of smell,

to whom the mignonette had no odor. We read of a priest who was insensible to all odors except those of the cabbage and the manure heap! Montaigne says he knew a man (Quercet, secretary of Charles I.) "who fled from the smell of apples quicker than from a cannonade." It would not have done for this gentleman to "chum" with Nathaniel Hawthorne, who so loved the smell of rotten apples that he always kept a supply under his nose in his study-table drawer.

There are, again, people who are unable to endure the smell of roses or strawberries.

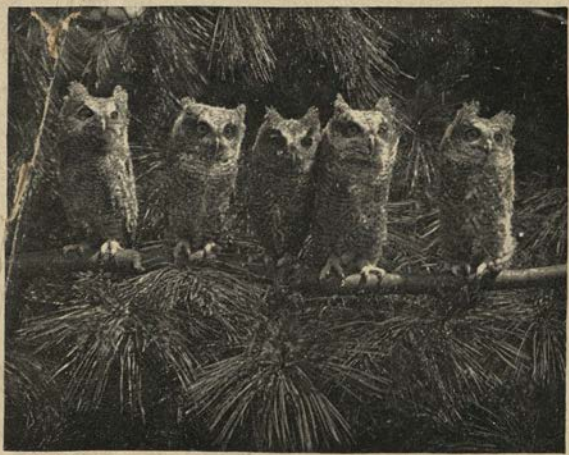
The likes and antipathies of different people in flowers are hard to explain. I know a person who has a violent dislike of the peony, dahlia, marigold, nasturtium, and every flower that has a rank, weedy smell; and it is difficult for that individual to believe that I, on the contrary, feel an exultant pleasure in all flowers and weeds. I like the musty fragrance of hound's-tongue, the rank smell of tansy and even the Symplocarpus of the swamps. Among weeds I have an especial fondness for those hardy and showy weeds of regal port, the violet-colored Vernonia (ironweed), and the purple Eupatorium, slandered with that baker-like and plebeian name of Joe-Pye weed. These two mighty weeds have swept, like armies of splendid Goths and Huns, over nearly the whole continent. I have seen them up to the horses' necks on Western prairies, and everywhere *en échelon* along the lanes, railroads, and turnpikes of New England and the Middle States. I sup-

pose Vernonia got its name of ironweed from the color of the faded corymbs in autumn, but the name fits aptly the stubborn hardihood of the creature and of its brother, Joe-Pye.

As hinted in the preface, I am writing from a hill-croft a few miles from the golden dome of Boston, by bumble-bee air-line.

("Like trains of cars on tracks of plush
I hear the level bee.")

Longfellow once said that, if he were kaiser, he would build a hunting-box here. Without being kaiser and kaiserin, or desiring to be, we have built a hunting-box, and the game we hunt is not foxes or hares, but ideas, character, and joy. On an old-fashioned terraced estate adjoining southward once lived a famous painter, and in its roomy, high-ceiled house painted his mellow-toned pictures; on our eastern border a Scottish artist has established his lares and penates, and set up his easel; on the crag above in another direction was written part of a digest of the decisions of the Supreme Court of the United States; and "endelong" the ridge to the north, t'other side of two meadows, lived and wrote a delineator of New England life who tried in vain to remain a dilettante, but ended by drifting into the moral heroic, the arena of manly ethics. The grounds and bosks around are filled with birds, with an occasional visit from the whippoorwills, quails, herons, and night hawks; and in midsummer moonlight the eldritch whinnying laughter of the pretty little gray screech-owl is heard. The yellowham-



WISE MEN OF THE WOOD.

mers often wake us with a reveille on the shingles. The red squirrels, woodchucks, chipmunks, mice, seem to think the place belongs to them. And of course it does: they are the aboriginal inhabitants, *not* dispossessed by us. Indeed, the saucy chipmunks once established grand-trunk lines for "running in" winter stores of hickory nuts into the house, and kept us awake nights gnawing these under the floors, and playing tag over the ceilings, — until, unawed by our mighty thumps, they cuddled down, when it pleased them, by the huge fireplace-chimney and went to sleep.

Into the lawn and garden the mistress of the cottage admits none but sweet-smelling flowers, — mignonette, sweet-peas, hyacinths, jonquils, daffodils, honeysuckles, lilies-of-the-valley, sweet alyssum, sweet geranium, and roses. At the back of the house is a tall hedge of red and white lilacs planted by the master nearly three lustrums since. The freehold includes part of an old turnpike, — now a wild lane, and held by one individual at least in high honor, because it is full of barberries, cornels, oaks, cedars, blackberries, wild strawberries, showy wayside weeds, wild cherries, wild grapes, and the sweet-brier rose. The last-named plant is the eglantine of the poets of Europe, whence it was introduced here. It does not seem to flourish in our dry climate as it does over there. The time to catch the drifting fragrance of the sweet-brier is just after a gentle shower in June,

> "When the lilly leaf and the eglantine
> Doth bud and spring with a merry cheere."

The fragrant cells are on the under side of the leaves. It is delightful to inhale them at close range; but the rarest perfume is got by accident as you are walking by. I suppose it is too shy of cultivation for us to have whole hedges of it, as they do of the Cherokee rose South. It flourishes best, too, in a semi-shade, as all roses do. It will have to look to its laurels, or the lush Wichuraina from Japan, with its long, creeping, shiny stems — thorny, like the eglantine, and deliciously perfumed — will drive it out.

The poets early made the acquaintance of this shy dryad, the sweet-brier. Arviragus in "Cymbeline" says, addressing Imogen, —

> "The leaf of eglantine, whom not to slander
> Outsweetened not thy breath."

Was there ever a more delicate simile? showing, too, Shakspere's accurate knowledge, in the specification of *the leaf* as the source of the fragrance. Probably Milton in "L'Allegro" confounds the eglantine with the honeysuckle, as was sometimes done. At any rate, he speaks of the sweet-brier and eglantine as separate plants:

> "To hear the lark begin his flight
> . . . . . .
> And at my window bid good-morrow
> Through the sweet-brier or the vine
> Or the twisted eglantine."

(It is not from the root of this bush, but that of *Erica arborea*, or white heath, in Southern France and Corsica, that brier-wood pipes are made. And glad I am that my delicate

brier need claim no company with that curse of mankind and womankind, — filthy, poisonous tobacco.)

To return to the lane. In my sentimental moods I call it "Sweet-brier Lane," after that one in old Puritan Boston centuries ago. And with right, for sweet-briers are abundant in it and about it. There is one whose long liana-fingers reach thirty feet as it climbs up and out toward the light, and another has climbed to the top of a young wild cherry where every spring it flings out its little pink-tinged pallid roses on the air. There are others around the huge rock (on the hillside) that once stood immovable in the weltering glacier flood (such is my belief), and formed the eddy which churned out our hillside thwaite, or croft. All this was long ago in the gravel age. The age is gone, but the gravel is here yet.

The wild cherries are generally throwing their honey-smelling fragrance (like that of life-everlasting) around the lane about the last week in May. When other fruits are scarce, these trees are alive with the noise and flutter of robins, jays, yellowhammers, and cuckoos, who begin on them so early that one wonders they don't get the colic. The birds hang around for many weeks till the last cherry is gone.

Curious habit, that of the robins and jays, of always flying off to another tree to eat the cherry they have picked. You would think father or mother robin might eat just that one on the bough where it grew. No, sir! Away he or she scuttles to the nearest tree, and back

again soon, to do the same thing over. It reminds you of a dog with a bone or a chicken with a worm. Perhaps it is inherited custom from the time when, if an ancestral robin got anything to eat, he *had* to go off with it, if he would eat it in peace.

As for the purple lilac, with its "heart-shaped leaves of rich green," and "many a pointed blossom rising delicate," don't despise it, and call it a plebeian flower. It is a good democratic blossom, the "laylock," and fascinates all sybarites of color and perfume. No purple poisoned flower of Rappaccini's garden is the lilac blossom. A bunch of white lilac blooms would grace the fair hand of Beatrice in Paradise, and perchance such the lovely Proserpine let fall as she was borne away in gloomy Dis's wagon. What a beautiful sight it would be to see in rural towns every spring processions of young girls, clad in spotless white, and carrying branches of lilac in their hands! As it hangs in globed masses and great drifts of bloom over yon old wall, it seems a lovely shrub to be growing over one's tomb, — which, indeed, has been the thought of others: witness those antique lilacs thrusting their blossomy branches out over the old mossy red-sandstone tombs of King's Chapel in Boston. What strength, tenacity, aboriginality, in the lilac! You can scarcely eradicate it when it gets a fair start, and it seems to have no enemies.

The same appears to be true of the scores of foreign varieties now growing in our arboretums. The lilac scent is most delicate at night or after

a shower. In a room it is too strong; but stand on the lawn at night, and catch now and again the faint musky odor exhaling from its myriad little scented vases and drifting around like mist or incense, and sweet as hamadryad's breath!

Emanuel Kant made the unfortunate remark that it is not worth while to cultivate the sense of smell, and some one else has called it "the neglected sense." Judging by what I call the greatest miracle in nature, — a dog's nose, — it is a lost sense. Watch that setter on the full lope, thorough brake, thorough brier, this way and that, in search of a trail. When he strikes it, he stops short, as if he had run against a rope or a wall, and wheels and follows. It has been stated as probable that a dog taken from home in a closed box or wagon finds his way back by drawing on his memory for a train of scents noted on the way. Would it do for æsthetic man to have such a nose? Wouldn't the torture from ill odors outweigh the pleasure from delicious ones? Even as it is, our sense of smell is the keenest and best developed of all. Papillon has pointed out that the tongue reports only four sensations of taste in eating, — sweet, sour, bitter, and salt, — and that the greater part of what we imagine to be the taste of things is only the perception of their odors. If you hold your nose, you can't tell the difference between a lime and a lemon, or between different kinds of nuts, cheese, or meat. Bernstein says that even spectrum analysis, which can recognize the fifteen millionth part of a grain, is far surpassed in delicacy by our organ of smell. And man's ol-

factory sense can be cultivated by persistent effort in noting the odors of flowers, plants, and animals, and practice in recalling them in the memory. Indians and negroes can tell in the dark to what race a man belongs, and blind people often identify their friends by their characteristic odor. Not only each species and variety, but each individual plant or animal, has its distinctive odor. Nature never repeats herself. Even a tree has a variety of scents, — those of root, bark, leaf, blossom, seeds, — all distinct. It was with fine insight that our ancestors named the perfume of a flower its *essence* (that is, life, from *esse*, to be); for that is the very core of its nature, its inexplicable and distinctive gift. It is a curious fact that some of the tiny flattened and colored sacs called scales on some of the male butterflies are "scent scales," filled with delicate perfumes of flowers, musk and sandalwood. Those scales often have curious shapes, different from the ordinary scales on the same butterfly, — shapes as of Indian clubs, shepherds' crooks, battledores, whip and lash, etc.

But to return. As we are not likely to get, even by cultivation, a *very* much better nose than the one we have, we might see what can be done about getting more æsthetic pleasure from that. Perfumers have come to understand that the nostrils can apprehend harmonies of odor, just as the ear harmonies of sound. A skilled perfumer is one who has an intimate knowledge of the whole gamut of odors, its chords and discords, and can ideally unite these in harmonious combinations. Even if each component part

smells well by itself, it won't do to mix parts hotch-potch. In planning his odor-chords, he recognizes, for instance, that rose and rose geranium are a semitone apart; certain others are flatted if mixed with this or that. In truth, he plans a new bouquet of perfume as a musician plans a new piece of music.

The language of the great world of perfumes is almost as vague and immense as that of music. No mere words can express the inarticulate meanings and suggestions of either. Perhaps it is this fact that has suggested to Mr. Henry T. Finck the idea of a perfume piano (what shall we call it?—a florichord?) Mr. Finck may have been reading G. W. S. Piesse, who has worked out the æsthetics of perfume harmonies. He affirms that fragrances accord in octaves. Vanilla, almond, heliotrope, and clematis, e.g., harmonize perfectly. Citron, lemon, orange-peel, and verbena form another octave in a higher key. Piesse thus forms gamuts of odors, and mixes his essences as painters blend their tints. I suppose the perfume piano would be utilized in some such way as this: first, as a crude beginning, suppose the performer wished to compose, or play, an odor-sonata on the seasons: he would begin with pulling out the stops for violets and wood-anemones and the like for the low preludings, touching at the same time those that would emit a pungent savor of the cool forest; then coming in with the pedal for the strong lilac and hyacinth tones and the smell of growing grass and leaves; then, in order, all the sweet roses and honeysuckles and flowers of hot

midsummer, not forgetting a discord of a few moments for the rank smell of wayside weeds, such as tansy, the carrion-flower, the nicotic blooms; and ending with the warm aromatic flowers and the asters and the goldenrods of autumn. It seems rational to suppose that some future Wagner may think a musical drama unfinished without rare perfumes stealing through the house in harmony with each great motif of the work. Or why not introduce perfumes as subtle motifs themselves? For instance, the fragrance of which the orange-flower is the type and key-note is widely distributed and constantly recurring among flowers. It can be detected in crab-apple, sweet-pea, white-clover, and grape blossoms. Now, in your drama of "Tristan and Isolde," we will say, there is a love scene associated in the senses with the orange-blossom fragrance. Whenever in the drama there is an allusion to or reminiscence of this scene, let the motif be either the orange fragrance or a variant of it, which will suggest it. An audience could soon be educated up to this subtle and delightful art-sense, which would always of course be no more than a subordinate part of the whole work, but would strengthen and enrich it. I remember how the exquisite odor of magnolia blossoms sprayed into the air of a Boston theatre during a scene in a Southern play heightened the pleasure of the audience. It was no claptrap device, but, in my judgment, true art and true refinement of thought that dictated it. In a great art production none of the senses should be ungratified. If it were possible (and why is

it not?) to conceal behind the frame of a pictured bunch of lilacs an imitation of the lilac fragrance (in a form as sublimated and permanent as that of a bit of ambergris or musk), it would add immensely to the value of the picture, — not as art of course, but simply as increasing its power to gratify, which is about all mere flower painting can attain to, anyway.

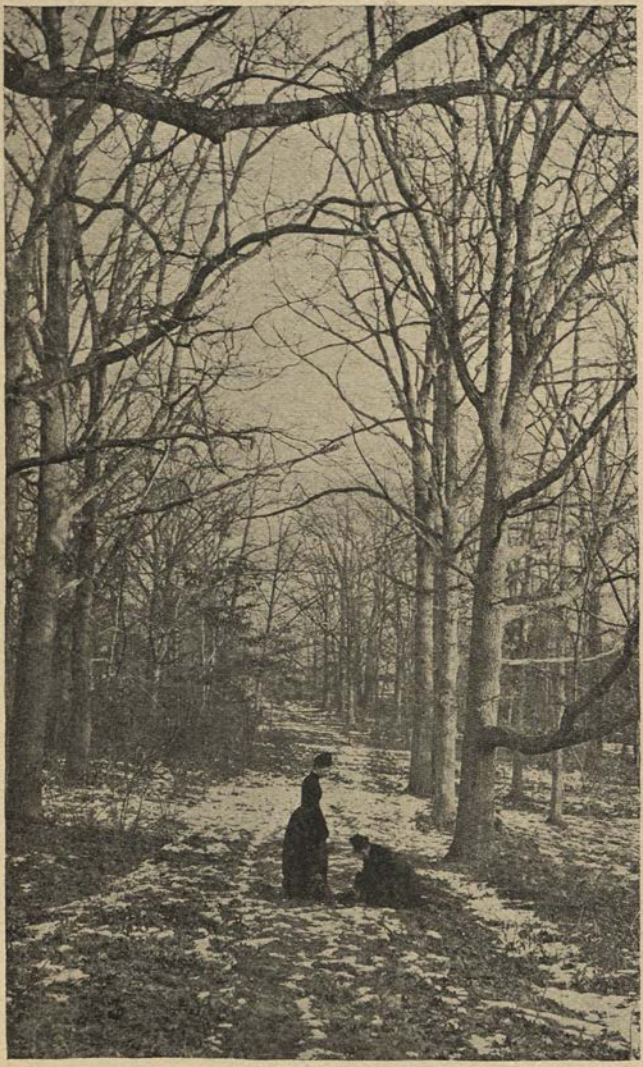
It was stated a few pages back that odors are solid particles of matter floating in the oxygen of the air. But from the fact that a single tiny grain of amber has perfumed for forty years a bundle of papers and a film of air a foot in thickness, and that its odor fills a large room in its every part, a scientific writer, Mr. R. C. Rutherford, has broached the theory that odor is a mode of motion; that there is an odoriferous ether, like the luminiferous ether, and that different sensations of perfumes are simply the feelings excited by differing rates of vibration of the odoriferous ether. For how, says he, is it physically possible for a tiny grain of amber or musk to fill a great room with actual solid particles of itself for so long a time? The thing makes too great a strain upon our belief in the divisibility of matter. It must be that the grain of perfume sets ether waves in motion, which report themselves to the nostrils as sensations of smell. One would think this might be tested. It does not seem to harmonize with the nourishing theory of odors. Democritus or Charles Lamb's sassafras-tea boy could not have been nourished by ether waves. Tyndall did not indorse this theory of Rutherford's.

II.

BACK INTO THE SUNSHINE.

FAIR, but wofully chilly yet. Marian's nose is red and raw, and coughing drowns the parson's saw. It is still unsafe for cits and amateur horticulturists to be out and digging in garden or flower beds. It is pretty hard for the sun to warm up the atmosphere permanently, when mighty blocks of snow-chilled air are railroaded down from the north every night anew. It is dry enough for ploughing, though; and, as I trundle in to the city over the rails, I see a farmer turning over with flashing coulter the black furrows of the celery ground, now sugared over with thinnest sprinkling of snow. Higher up on the slopes are green lawns striped with white and set in a framework of black spruces. March is now nimbly footing it toward the goal on his last lap.

There has been a stirring among the cold roots of the Symplocarpus for some time in the marshes, and its purple-striped spathe is already thrust up, fresh and glistering, amid the oozy sponge and gray débris of the marsh-side, where as yet green is barely the dominant color; while, ostensibly as if to celebrate these quiet parturitions (or apparitions) around him, but in good sooth for



EARLY SPRING IN THE FOREST.

private matrimonial reasons of his own, the innocent little hyla frog inflates his throat and fills the dim vault of night and the blue urn of day with the shrill music of his two-noted flute. The songs are not in unison, — like those of the green tree-hoppers of August, when the air pulsates as if itself vocal, — but perhaps all the gayer for that.

Among the very earliest heralds of spring are the bright-red pestles and spathes of the sturdy old garden rhubarb or "pie-plant," as they call it out West. But to the impatient gardener old ruby is a terribly obstinate and conservative chap, who ought to be up and doing long before he shows his head. The hyacinth whispers, "Spring is near!" and the crocus and lily cry, "Hear, hear!" but old grandpa Rhubarb sleepily mumbles that it's too early to be up yet. "We shall have snow yet, ye fools," says he. But you can coax him out by putting an old half-barrel or frame of boards around him to focus the sun's rays.

But the grass is not to be outdistanced, and has long been struggling upward out of the brown sod with its little swords of fluted green, — always bowing, bowing, in the sunshine, and whispering its pretty nothings all the day. The warm, scented robe of the mother, — and we children hiding our faces in it as we play about her knees. And then, in its larger growths, purveyor of milk and bread and sugar to man (the sugar-cane is a grass). Enswathing the globe with its garments of green and gold, buoying whole nations on its billows of verdure, first to

welcome and last to see us go: we roll in it with delight when young, and it tenderly uncurls and ripples above our graves at the end.

The profanation and ruin of grass is in the too free use of the scythe or lawn-mower. The horror of seeing a bit of woodside grass, a miracle of beauty with its tangle of wild strawberries and crumpled-dainty ferns and its buttercups, where you were wont to admire the iridescence of the early dew, and where you were hoping to gather the pretty little strawberries in June, — to see all this mowed off to an ugly stubble, in effect something like an Irishman's bristly head with protruding ears! I always try to keep a bit of unmown grass, a piece of springing wildery that no blade of steel may touch. I don't care how thick and sere and tangled it is: it will take care of itself; and in the spring you will see the green slowly, but surely, out-tingeing the brown, until it waves triumphant over the last year's stems.

This is not to deny the pleasures of mowing, — the sweep of scythe in morning dew as the "lusty angels" bear down upon the rich burthen of the sward, with steady timing of their strokes, with swish and swing throwing up the lengthening swaths, and ever and anon the merry ring of the stones on the blades of steel as the mowers stop to whet. This is glorious: I've tried it myself on the slopes of the Alleghany Mountains and in the meadows of Ohio. All I say is, Don't mow all your grass, but keep a patch for beauty's sake.

Get out in the spring, as soon as a warm day comes, for a tussle with last year's leaves. It is astonishing how a hard all-day battle with rake or spading-fork will brush the cobwebs out of the mind and smooth the wrinkles of the brow.

You uncover your bulb-beds, and find that the hardy hyacinths have fought their way up through the unfrozen mould under the leaves; Proserpina is moulding the gold-wax cups of the cool crocus down in the earth, and fashioning with cunning fingers the fretted diadems of the dandelion, — a flower unhonored by the mob, but loved by the gods and their friends.

Wild geese are harrowing the sky; the rain-crow calls you before you are up; the sleepy old toad that you annually resurrect in the asparagus bed seems just as thunder-struck, yet patient-stupid, as always of yore at the sudden explosion of dirt that prematurely flings him into the sunlight.

The spring seasons of 1894 and 1895 were both phenomenal. In '94 Spring was a month in advance, and in '95 Summer by a forced march of many parasangs arrived three weeks before its time, rudely dislodging Spring and shouldering her into the laystall of forgotten things. The first three weeks of March, '94, were one unbroken balmy May. In '95 May was hot June. Weather prophets were unfashionable. The goose-bone shrivelled under the scornful glances bestowed upon it. The first week of March, in '94, boys were playing leap-frog on the grass and marbles on the dry mud; butterflies were floating, bees humming, lilac buds swell-

ing, and hylas piping in the marsh. And the ground captured in this fine charge on time and space was stubbornly held. The buds and blossoms came bravely on. On May 8 a white lilac bush was in full bloom that in '92 gave its first blossom on Decoration Day (May 30), and was picked the next day to celebrate the birthday of the poet who has made this flower immortal (he had died two months before). By May 29 the crickets were cheeping and the fireflies were swinging their golden lanterns high and low over the meadows.

Who can forget the heat squall of May, '95? To the horticulturist it was what a squall at sea is to the sailor. As it rushed down upon him, the amateur gardener had to run now to this rope and now to this sail to trim the ship to the mounting waves of vegetation and the billows of pelting heat surging up from the south. Now peas must be planted; then rose-beds must be edge-trimmed and manured; next away rushed Monsieur Adam to weed currants; and before the bewildered good man knew what was the matter the grass was beyond the lawn-mower's power, the asparagus was popping up as if it would be all done in a week, hyacinths and daffodils were dropped out of sight, jonquils appeared all in a clump, cherry-trees burst into great masses of bloom like gigantic balls of popcorn, the copses suddenly filled with latish birds, —orchard and Baltimore orioles, brown thrasher, and all; while to the unheard but powerful fiddle of the god of heat the leaves of each forest tree and the blossoms thereof hastened by

one "prompt-entrance" or another to assume their proper places on the stage of the annual drama, and play their part to the satisfaction of the omnipotent leader.

A special delight with me in garden-making time is watching the blue smoke curl up from the burning rubbish of my own and neighbors' gardens,— as if we were offering sacrifice to Priapus (the god of gardens) or to Pan. Mirage-like through the heat-waves from the burning leaves the landscape reels; from out the flames of yon crackling pile of green and winter-seasoned brush comes tenuous and shrill a plaintive long-drawn whistle (*Pfiffen*), the weird out-sighing of the life of the dying stick. And presently the rich wallowing flames, noiseless above the crackle below, ascend to heaven and the white smoke rises high in the air.

I have in vain searched literature, both in books and periodicals, to find an æsthetic study of the forms of smoke and steam. Curious, when one considers how universal, how obtrusive, they are! Watch the puffing steam escaping from a vent in the side of yonder old building. See how it glorifies the surrounding ugliness, with its endless transformations and ever fresh improvisations, — the dainty Ariel, the mocking Undine, tantalizing you, filling your mind with regret and even despair over the perpetual wreckage of its prodigal inventions. See how the wayward sprite, the wind, seizes with its deft fingers the endless streaming threads, wreathes and twists and twines and

blows, fretting the soft sun-mist into faintest fleece, — a miracle of clair-obscure, full of craterous glooms, ashen and pearly lights, and silvery lustres ethereally pure against the azure sky.

A swirl of vapor, a puff of smoke, — these are the very type of evanescence: nothing else in nature so formless, weightless, capricious. Yet the solid globe itself and these watery bodies of ours are but a conserve and solidification of vapors, and to vaporous fire-gold destined to return.

Smoke and steam are opaque, like clouds. But clouds have *angles*, smoke and steam have the softest *curves* in nature. Clouds are always edged on the side of the wind. Cirrus clouds are often parallel and striated, with delicate decision of edge. Not so steam or smoke. Clouds have some strange morphic or cohesive quality that keeps them in serried ranks when smoke or steam would be torn to tatters by the attacking wind.

What is smoke?

Chiefly carbon, or soot, carried up by warm gases into a denser and colder medium. The fantastic contortions of escaping steam are due to the impact of light gases upon colder and heavier ones. Smoke escaping from a tall chimney on a quiet day rises with a slow and stately movement because unforced; but steam, when propelled violently outward or upward, gets immediately into a state of unstable equilibrium, and either slides hastily downward around its vent, with umbrella-shaped curve, or is torn into

fantastic spray as it shatters itself against the ceiling of the air.

A locomotive with its plume of mingled smoke and steam reminds you of Longfellow's north wind, Kabibonokka, hurrying over frozen fens and moorlands, —

> "And his hair, with snow besprinkled,
> Streamed behind him like a river,
> Like a black and wintry river,
> As he howled and hurried southward."

Sit by a car window and study the endless coil of water smoke,—its ever changing mounds, its convolved opalescent masses rolling and twisting, shot through, like Geissler's tubes, with intermittent light, a coil of vapor that uncoils before you can fairly observe it, snuffed out like a candle before you are out of sight. Seen at a distance, the inky or snowy globes of the train-plume show like a chain of Greek Ω's.

Smoke is the ensign of trade and oriflamme of war; helmeting the mountain tops; rising forever in pillared pomp out of the earth's volcanic spiracles; striating the globe with the snowy trails of the railways; far out on the high seas breathed from the lungs of the great oceaners; and stealing up from a myriad happy hearths in every land.

Speaking of blue garden-smoke in spring why *is* the smoke of wood often blue in color? Now don't run to the learned books to find out, for your search will be in vain. None of the works on physics or chemistry so much as touch on the topic. The cyclopædias are full of talk about patent smoke-consumers, but have never a

word on the æsthetics or science of smoke. As for telling you why smoke is blue, that is too ridiculously trivial a matter for learned men to consider. So we are left to our own devices. I am doubtful, but offer a suggestion or two. In the case of imperfect combustion, wood smoke is white or gray, owing, of course, to a certain amount of unconsumed carbon and hydrogen carried up into the air. Now, in a clear, rain-washed atmosphere the draught is good, and the soot or carbon is nearly all consumed. Does what is left (carbonic acid and water, chiefly) form with the other gases a kind of floating mirror reflecting the blue of the sky above? Either this, or the gases of the smoke are of such a nature that they absorb all the colors of the spectrum and reflect only blue, irrespective of the sky color. If you can see blue smoke on a cloudy day, that will settle it. (The very next day after writing this I did "settle it," by observing in a woodland an upburst of delicate *blue* smoke from a fire of sticks made by boys; and *the entire sky at the time was covered with gray mackerel clouds.*) Subsequent watching of the smoke issuing from a locomotive funnel has confirmed in me the conviction that it is undoubtedly chiefly the vapor of water that causes the blue tint of smoke, — the vapor mingled in a certain proportion with the gases of the combustion.

I remember one experience in my life in which I got smoke more than enough. I would gladly have seen less blue smoke curling up from burning wood that spring when, as a boy,

I helped at the heavy work of burning up the prostrate timber of a ten-acre wood lot. Oh, the smarting eyes, the dry and burnt skin, the backaches, thirst, and smutched face of those days! Yet it was exciting, fascinating work. The idea was to keep a-going, by means of chips and brush, as many fires as you could around stumps and log piles, and "nigger-off" as many lengths as you could of the big trunks for rolling into piles. As fast as the minor logs became separate from the heap, you kept rolling them back with tough sapling spikes (cant-hooks were unknown) on to the red-hot mass. To *nigger-off* meant to burn into lengths, — so named from the black color of the charred ends. You had to flax around in pretty lively fashion to keep your "riders" burning across the big logs that were niggering. With acres of fires going at once, and dense strangling smoke everywhere, and intense heat, it may be surmised that forest-clearing was no joke. (I have taken a hand in every phase of the virile sport of pioneering, but know no work quite so exhausting, although binding over-ripe bearded barley in a dusty field after a reaping-machine is about as disagreeable work.) At night several hands would join in placing huge riders on the logs that would last all night. And there in the midnight silence and dew the sacrificial fires smouldered and glowed, and the smoke curled slowly heavenward, forming a scene grim indeed, but with a suggestion of primitive strength in it that satisfied. It is a majestic sight to see at night a forest afire far up on a

mountain side, as you pass on the railway,—the long red, ragged line eating its way up and along with uncontrollable fury; but the forest clearing, if less sublime, pleases more, for it is serving man's interests rather than injuring them.

From a porch overlooking the city of Boston you may often watch, in summer, the wrestling of the city's smoke with the tangled skein of a passing August shower. Yonder it comes creeping up from the south-west, and to my fancy the scene shapes itself to this:

A whisper of conspiracy among the clouds:
Fetching their stealthy compass far around,
The hulking water-dogs enclose the town.
Down drops their bell-net to the ground,
And in a hollow threaded globe of tremulous-dun rain
The spires and gilded dome are caught.
The breath of chimneys all a-blur,
A vague blottesque of efreets huge and storm-banshees.
In fierce mêlée their forces clash;
Now this way and now that the victory inclines, till—
Presto! the noose slips; with draggled net
Away fly baffled water-sprites,
Twice pierced with the gold tongue of the sky-snake,
Bellowing, their gray beards blown about their heads.

Walt Whitman has a few realistic bits of smoke-painting. How full of New England associations the following lines are!—

"Lull'd and late is the smoke of the First-day morning,
It hangs low over the rows of trees by the fences,
It hangs thin by the sassafras and wild cherry and cat brier under them."

Thoreau, so far as I can discover, is the only writer in the world who has written poems of any merit on smoke; namely, his

"Light-winged smoke, Icarian bird,
Melting thy pinions in thy upward flight,"

and the "Smoke in Winter":

"The sluggish smoke curls up from some deep dell,
The stiffened air exploring in the dawn," etc.

Let's see. We ran off the track [1] in talking about garden-smoke in spring, or we should ere this have been out searching for the rathe hepatica and cowslip, — the earliest flowers, perhaps. It would be in order to touch on the violets here (those "blood-drops of the beautiful youth Atys"), but Burroughs has exhausted the subject; and I will simply quote (apropos) an exquisite simile I came across in old Achilles Tatius, where he is telling of the paintings he saw in Sidon, among others that of Europa and the bull, — his masterly and minute description of which, by the way, Tennyson has copied. Tatius speaks of the painting of a girl *whose "eyes were tempered by a languor such as is seen in violets when they begin to fade."*

It was in allusion to the Greek custom of twining crowns of this flower that Alcæus called Sappho *ἰόπλοκ'*, — "violet-weaving." When poets and artists speak of violets, they think naturally of light-blue color. But only half of our twenty varieties of violets are blue: the rest are purple, yellow, white, lilac, and one even of a green tint. The cultivated *Viola tri-*

[1] "Digressions," says Laurence Sterne, "are the sunshine, they are the life, the soul, of reading." Take them out of a book, and "one cold eternal winter would reign in every page of it." Jean Paul's *Extra-blatts* are sometimes the choicest parts of his books.

color, or pansy "freaked with jet," is more popular with the mass of people, I notice, than is the violet proper. But the pansy has lost its perfume; and I always find myself laughing at the scowling little oil portraits of troll men its petals seem to form rather than passionately admiring the flower, though in sumptuousness of color it has been made to attain marvellous results.

Ruskin says that in summer he reads nothing but "the ἀί ἀί on the flower inscribed with woe," referring to the pretty myth of the death of young Hyacinthus accidentally killed by the discus when playing quoits with Apollo. From his blood sprang the flower, with ἀί (*alas!*) on its petals. Now, on our modern hyacinths there are no such pencillings, nor on the wild hyacinths, which only in Shakspere's day began to be cultivated. What the Greeks meant by the hyacinth admits still of some doubt. Ovid says it was shaped like a lily and was more splendid-shining than Tyrian purple. Virgil speaks of it as *suave rubens*, "sweetly blushing," and as *ferrugineus*, and as possessing *fulgor*, flaming splendor. Old John Martyn, botanical professor of yore at Cambridge, England, in his fine illustrated edition of the Georgics, writes that the flower was the red lily with recurved petals called the Imperial Martagon. Its spots he has seen take the shape of the letters AI; and they so appear in his illustration of the flower, which he renames *Hyacinthus poeticus*.

Every spring, when the hillsides around and beneath us are white with billowy seas of apple

blossoms, I ask myself why we let the little Japs outdo us with their cherry-and-plum-tree festivals, — why we cannot have an Apple Blossom Day in the spring as well as an Arbor Day. The cherry and plum blossoms in the tea gardens of the suburbs of Yeddo attain the size of a rose, and both exhale a faint delicious fragrance. The headquarters of the cherry-bloom cult are at Yoshino. The plum blows in February, and the cherry in April; and during each period the Japanese daily newspapers print despatches from the gardens, so that their lovers may come out to see and enjoy the white, pale-yellow, and rose-tinted plum blossoms and the blazing canopy of pink cherry blooms. Beneath the trees walk enthusiastic maidens and young men, conversing, or composing poems on love and flowers, which poems they suspend from the boughs, as if with the pretty idea of sharing their pleasure with the trees, while artists with lacquered color-cases are painting the blossoms for screens. At Yoshino every paper lantern has cherry blossoms painted on it, and your very tea-cakes are blossom-shaped.

Other "nimble musicians of the air breathe sweet loud music out of their little instrumental throats," but none is quite so sweet to me as the song of the Bluebird in spring. Maurice Thompson speaks of the "almost savage tenderness that quavers from his throat as he pounces upon the dislodged worm." That description is close to the fact. I have often had the blue-coats domiciled in my boxes. In the severe win-

ter of 1894–95 the cold made great havoc with them. In the region west of Boston, swept by a twelve-mile radius, only two bluebirds' nests could be heard of in the spring of '95, and only one in that of '96; and a lady wrote from Helena, Ark., that, after systematic investigation, only three families of the birds could be found in "a very wide circuit of Arkansas territory," while everywhere their lifeless bodies were found in the little houses put up for their use. She says that on January 28, during a heavy snow, four of them were seen to take shelter in a martin house, and a month after were found there dead. Reports from Missouri, Illinois, Iowa, and New York told the same story. However, John Burroughs told me in the winter of '96 that there was some mistake, he thought, for he had that winter (February) seen thirteen bluebirds near his place, and had heard of them as found in Florida in goodly numbers. Undoubtedly they will in time recover their former status. In the spring of '97 great flocks of them were seen in Washington; and hundreds, perhaps thousands, passed through Eastern Massachusetts. I believe it is rare to hear a bluebird's note in the neighborhood of Boston so early as February 28; but in an old Cambridge diary of mine I find a record to that effect.

A sign of spring that is unmistakable is that wedge of wild geese far aloft. Probably, or rather undoubtedly, Bryant's solemnly beautiful "Lines to a Waterfowl" were really lines to a wild goose or a wedge thereof! The explanation of the wedge is simple enough, though I

searched books in vain to find it in print. I suppose it has occurred to many. It is this: say that two geese attempt to follow their leader. Now, in order that their wings may have room to play, they will naturally tail out and form a small wedge to start with. Then a fourth bird lines along behind the one on the left; and a fifth, in the desire to get as near the leader as possible, takes after the one on the right. And so they keep on, forming wedges of such varying length and irregular triangular shape as we see. Joseph E. Chamberlin, of Boston ("The Listener"), writes of two interesting groups of these wild fowl observed by him in April, '96. One was a fine, orderly, harrow-shaped goose brigade, with a pilot well in advance, then the apex goose, and the long diverging lines, all steadily honking, flying high and in good order. The other set seemed to have lost their leader or got demoralized in some way. They were flying very low, in great disorder, "their honking not measured, but tumultuous," "all scolding at the top of their voices," and finally disappearing in a disorderly flight northward.

What a mysterious, almost awesome thing is this migration of birds (and of butterflies, too, the milkweed butterfly migrating to the north every spring by thousands, and south in the fall). Some of the latest and most elaborate researches into bird migration are by Heinrich Gätke, who lives in Heligoland, — the curious island, formerly England's, lying directly on one of the grand-trunk routes of bird migration in Europe. But in his huge book, now translated, he con-

fesses himself baffled as to the cause of the habit with birds and the method of guidance they have, when twice each year, in spring and autumn,

> "Intelligent of seasons, they set forth
> The aëry caravan high over seas."

J. A. Allen and Maurice Thompson have written interestingly on this topic (the latter in Alden's Library Magazine for 1885); also Charles Dixon in "Migration of British Birds" (1895). The two former explain the southward range of birds by climatic changes coming after the Tertiary, — the melting of the glacial ice-cap of the temperate zone and the extension south of the warm polar summer, etc. Dixon accounts for migration by the shifting range-bases of each species due to oscillations of climate and subsidence of land in early ages. Land sunk so gradually that it was not noticed by the birds; and, when it had all disappeared, they still stuck to the old route, the young being piloted by the old each year.

There is a touch of the bobolink's note in that of the red-winged blackbird, — the *gurgalee* or *okalee* bird. One morning in early spring, in the light of the just risen sun, a flock of these birds near the house held a grand consultation on the state of the weather. They were all speaking together. 'Twas much like the creaking of silver wheels of fairy wagons straining up hill over a snowy road, or like the pattering of water at the foot of a fall. On April 21, '96, there was the most remarkable concert of these fellows around me. It was a raw day. The

ground was green, but snow was falling. I was alone in the house, and from rise to set of sun, as the globe rolled round, I was as if besieged by a gay, jesting army of serenading birds. As I cautiously peered out of the windows on various sides of the house and listened to the infinite musical clang going on all day in the great tree-tops that almost touched the roof, I had a vague queer feeling that *I* was a kind of bird imprisoned in a glass cage on the ground and these fellows outside were the free lords of the earth. The trees were black with them; and the slant-flying snowflakes that spotted the new green of the foliage seemed, as they drifted down through the trees, like the notes of the birds falling in showers to the ground.

The third notch I cut in my stick in spring, anent birds, is when the brown thrasher arrives, and floats his loud carol from the tip of this tree or that as he flies about the bosky orchards and rocky copses near the house. When these mocking-thrushes come, we always feel, here near Boston, that spring is comfortably steadied on its legs. In 1896 it was not until the 29th of April that through an opened door early one morning the high, aristocratic, familiar melody rang in loud and clear amid what seemed now the miserable little peepings of sparrows and other small fry whose voices we had been subsisting on for weeks. After a little song on the part of the male the distinguished travellers, husband and wife, sat near by each other for some time, resting after their night flight over the city-blazing landscape of Connecticut and

Massachusetts, having luckily escaped the baleful torch of the Goddess of Liberty in New York Harbor, as well as the silent-winged birds of Athena, the owls,— birds that ought to have been dedicated, one would think, to Hecate or to Gorgonian Medusa. One year the thrasher did not reach our neighborhood until Decoration Day; and loud and triumphant, "liquid and free and tender," seemed his carol for the ashes of all dead soldiers. And somehow with his song came to me the thought of reconciliation, —

"Word over all beautiful as the sky,
Beautiful that war and all its deeds of carnage must in time be utterly lost,
That the hands of the sisters Death and Night incessantly softly wash again, and ever again, this soil'd world."

The brown thrush sometimes sings among the wild-grape tangles of Northern Georgia a low crooning, dreamy song in the night, as I have heard the Carolina mimic (or cat-bird) in Ohio in the daytime.[1] One of his Northern words, by the way, is very plainly "Georgy, Georgy." I have not heard him in the South, but think I have just heard that crooning sound amid the medley of his mimickry. I have been standing motionless for twenty minutes (May 5), listening to a brown thrasher who, seeing me close by, but not minding me, has been singing loud and

[1] I know not whether it has been suggested by any one else to call this bird after his Latin name, *Mimus Carolinensis*. At any rate, I suggest *Carolina mimic* as a pretty name. It is only a translation of the Latin. At present this jaunty, beautiful songster would have a good case against man in the courts of law for injury received in the nickname given him. What if he does mew occasionally, and once in a long while steal another bird's egg? Would you like to have your friends call you Mr. Growler because you are occasionally irritable, — have that for your legal and street and epistolary name? (More about the Carolina mimic in the next chapter.)

sweet all his stock of tunes, among which I recognized notes of the robin, song-thrush, bluebird, Carolina mimic, and the Virginia cardinal, — the latter awaking memories of my boyhood home in Southern Ohio, where the cardinal built in the porch every year. What need of travelling South to hear birds, when you have the brown thrush to gather them up for you over hundreds of square miles (like a winged phonograph), and come and tell you all about it in your Northern home?

Speaking of mocking-birds reminds one of Maurice Thompson's "Song of the Mocking-bird," published in the *Century* magazine some years ago. I think it the finest bird poem in literature. It is the fruit of long and enthusiastic study of the *Mimus polyglottus* in its haunts about Tallahassee and in Georgia. Here is one stanza: —

"And, when Night's vast and shadowy urn
O'erbrims with dreams,
I stir the vales of sleep with my nocturne.
Slowly, tenderly
Outflow its rippling streams
To blend with Night's still sea of mystery;
The pungent savor of the dewy buds,
The coolness and the languor of old woods
And the slow murmur of the darkling rills,
My art distills
Into a subtle philter, wild, intense,
Of tenuous melody
And slumbrous harmony,
Blown round the dusky hills,
Through fragrant, fruity, tropic thickets dense,
Lingering and lapsing on
And lost before the dawn."

How well the phrase "languor of old woods" describes the warm, sunshine-flecked, grassy floor

of certain Ohio and Indiana woods only those know who have frequented them. The phrase doesn't apply at all to forests this side of the Alleghanies. But it does to Southern ones, and to those of Southern Ohio, and of Southern Indiana, where Thompson has always lived.

The earliest bird to build nests is the English sparrow. A warm day even in January sets the males a-sparking. The sparrows on Boston Common have a pitiful struggle for the few knot-holes in tree-trunks to be found there. The first warm day or so in March starts them at nest-building, their object being apparently to get the best places early. I witnessed one day a hard battle about a coveted knot-hole. The females were nearly dead with the fatigue of the combat and dizzy from being pecked about the head. Occasionally one would seize her opportunity, and pop into the shallow cavity, but, unable to work for fear of an attack in the rear, would incontinently face about and come out. The males also were excited and interested participants. This little tragi-comedy took place right beside the great stream of humanity that flowed past all day, but the birds scarcely noticed the existence of the passers-by. Twice warring couples flew down and alighted between my feet, so that I was near picking them up.

If the English sparrow is likely to eat us up, I don't see but what we shall have to take Falstaff's course, and snap at him: he makes good pot-pies. The Japanese take advantage of the belligerency of the males to sharpen their bills till they are like needles, and then employ

THE WAG OF THE TREE-TOPS.

them in cock-sparrow fights. But we shall not imitate this, one hopes.

The Anglo-American sparrow recognizes his enemy in our American squirrel, just as his forbears did in the English one. One morning we heard a terrible rumpus being kicked up by some English sparrows, and discovered the cause in the shape of a red squirrel squatted on his haunches on a horizontal limb, with his back against the tree-trunk, gnawing a nut with entire sang-froid. He looked so much like a little Chinese idol or mandarin that I could not help laughing. He seemed to be saying: "I hear you, you little wretches. Just you dare to build one of your huddles of nests in my domain, and I'll soon settle your case. In the mean time nuts are plenty, and I scorn ye!" More fortunate in the memories of his fellow-citizens than the introducers of the English sparrow into America in 1851 and 1866 was the late Frank Dekum, of Portland, Ore., who imported from Germany, his native country, great numbers of song-birds, — thrushes, skylarks, nightingales, chaffinches, and goldfinches, — and, having cared for them until they had become acclimated, set them free; and now the woods of Oregon, it is said, resound with their songs. But the newspaper account lacks confirmation. We *ought* to have the European skylark and nightingale. England would be only too glad to exchange some for a few of our humming-birds. A seven days' voyage would not hurt either humming-birds or the English birds, I presume. But the best way for us to get larks and nightingales

would be to import the eggs, and have them raised in the nests of similar birds, as was done in the case of nightingales in Scotland (Yarrell, "British Birds," vol. i. p. 319), though in this case the young nightingales failed to return to their foster-parents, the robins, in the spring. The experiment should be tried here on a large scale in the Southern States.

III.

THE ENCHANTED FOREST.

In the folk-lore of most nations there are stories of certain persons who by some gift of the gods or fairies receive the power of understanding the language of birds. And then to them the familiar forests and fields suddenly become strangely changed. The spring when I first put on the ring of Canace and learned to know all the birds of the locality in which I was studying them I always had the feeling, when invading the hushed precincts of the grove or deserted orchard or the meadows, that I was entering upon enchanted ground. My eyes had been anointed with a mystic collyrium or euphrasy by which a new world was revealed. It was the old world beautified by the discovery in it of hosts of gay and shy winged inhabitants I had long read of, but had not seen and learned to know by their songs and coats. After a month of hard daily walking and observing I could say, with Thoreau,

> "I hearing get, who had but ears,
> And sight, who had but eyes before."

Many persons have, as I did, a knowledge of, say, some twenty-five or thirty of the more com-

mon species of birds, but don't exactly know how to go to work to find the shyer birds of wood and field they read of so much in these days. But all that is necessary in learning to know the birds and their songs is to buy a good manual or two and an opera glass with wide eye-pieces, take a walk or two with a bird student, if convenient, to get a start, and make a visit or so to a museum to get an idea of groups and general characteristics. Chapman's color-keys are now the best and simplest for identifying birds.

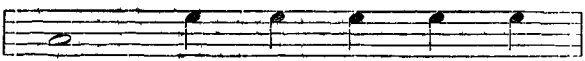
A musical notation of a bird's song will help identify it, if you can carry the notes in your head. One May day, in an old road, bordered by apple-trees, I heard what seemed to me, a beginner, to be the song of a new warbler. It was so energetic, so rapid, so prolonged, delivered with so much verve, like the house wren's gush of melody, that I was instantly on the alert to identify it. After a while another bird very kindly chased out my bird to a point where I could see him and hear him singing his *tĕ-tee' yŭ-wh' tee'*, which he repeated, with the modifications that characterize nearly all birds' songs, some half-dozen times before pausing, and ending always with a high-up *tweet*. Any New England bird student knows at once that I am describing the very common warbling vireo. But I thought then that my bird, with the gray-white coat and absence of wing-bars or other markings, might be the rare Tennessee warbler, described by Mr. Torrey in "The Footpath Way." But in looking over Wilson Flagg's

"Birds and Seasons" I found I had not yet identified what he calls the brigadier bird. Carrying his musical notation of that bird in my mind, I saw at once when next the supposed Tennessee warbler made himself heard that it was the warbling vireo, or brigadier bird. Flagg makes the last notes end in *brigáte*, indicated by two notes carried up two lines above the staff. My bird's *tweet* was very high, too; and, further, he was always found in tall wayside elms or other trees, as the warbling vireo is known to be.

Seek the brooks of running water, and you will find the birds there. They are epicures in water as well as you, and with their excitable nervous organizations need a good deal to drink. Write down in the field a description of the colors of the bird. And don't carry a gun. I would just as soon shoot the neighbors' children as break the heart of a pair of pretty songsters just beginning housekeeping. Of what use is a dead bird? If you are patient, you can learn to know every bird with the opera glass; and, if you don't kill them, you can enjoy their life and ways, and avoid also injuring the farmers and gardeners by destroying their friends, and hardening your own heart. Kill all the murderous cruel birds — crows, jays, shrikes, hawks — you can, if you must shoot, but don't for shame stain your hands with the blood of a harmless gay little songster just because you are too impatient to identify it by its colors and song when on the wing or in the tree.

My first book-identification of a bird was one of the earliest spring arrivals, — the White-

throated Sparrow, called in Canada *la siffleur* (the whistler), in the United States the Peabody Bird. One might call him the Little Jinnee, from his whistling.[1] I did not hear the bird's song for a few days, but one morning was awakened by a new six-noted fluting under my window:



Sometimes the stave had only three or four notes. But the next morning the solution came. It was the white-throat; for, after a few more broken bars and experiments, came clear and sweet the *Sam Peabody, Peabody, Peabody* of his delicate little quill, repeated again and again, as if the bird were proud of having discovered his song and wanted to repeat it till he was sure of it.

But what on earth did the daft little bush-fool mean by his "Peabody"? What's Peabody to him or he to Peabody? The members of that family that I have known in different parts of the country are pious, clean-bodied and clean-souled, eminently respectable, starched and whaleboned people. Conformity, conventionality, and stubborn conservatism are the family traits. The bird is shy: they are the reverse of that.

What spring note so cheery as that of the song-sparrow, coming as he does among the very first arrivals? I heard one on the place

[1] The Arabians say their genies, or Jinn, have round holes for mouths, and that their speech is a kind of whistling.

March 6 this year (1897), and with him were fully a hundred redpoll linnets and a dozen cedar-birds.

One morning at five o'clock, as I stood listening to a song-sparrow who had for several days in the same place been pouring forth his varied songs, — one of which always ended with one or two comical little falsetto pips in a lower key, like an unintended squeak of a flute, — suddenly, out of the air, everywhere and nowhere apparently, but close by, came a soft, dreamy *peabody, peabody, peabody, peabody*. Thinking at last to catch him in the song and see how he looked, I began to peer about. At last, happening to apply my opera glass to a pair of disconsolate English sparrows nearly overhead, who were sadly and silently contemplating the wreck of their nest in a broken electric-light fixture at a cross-roads, I suddenly discovered that what I had taken to be an English fellow-mourner close by them was their American cousin, Mr. Sam Peabody. And steadily the unconquerably gay song-sparrow kept up his attempt to cheer the disconsolate, as did some other members of the sparrow tribe, the chippies, who were blithely clicking their Lilliputian reaping-machines close by. The white-throat I notice (but the books do not) scratches hen-fashion, like the fox-sparrow and towhee. So does the song-sparrow, who also imitates his English emigrant brother in not disdaining to scratch for grain among roadside horse-droppings.

In walking through the fields one often stumbles upon the nests of song-sparrows, containing

four or five brown-speckled eggs. The birds will not leave the nests till you are in danger of stepping on them. They are often rifled by crows, jays, and boys, owing to their exposed situation. I remember one that was set in a most idyllic spot, — a little round earth-bowl about two feet across, all shaded with running blackberries and nodding grass and chased with all sorts of dainty herbs besides. It was well hidden, but sometimes the nests are exposed to the sun.

A characteristic bird of spongy April is the Coffee-headed Bunting (as I call it), or Cowbird. Its notes to me are all very musical. Mr. Frank Chapman affirms in his "Birds of Eastern North America" that "no joyous song swells the throat of the male," and to him it seems as if the "guttural bubbling" were produced "with apparently nauseous effort." H. D. Minot gives a fuller and better account of the bird; but he, too, calls his *cluck-see* "unmusical," and says "it is painful to hear him." I don't understand: to me every note of this bunting is pleasing and musical, — from the tinkling gurgle of his courtship, uttered with ruffled feathers, outspread wings, and a kind of convulsive movement, to the plaintive-sweet quadruplet of notes (*peeu'-stiddy*) he utters when on the wing or perched on the tip-top spray of a high tree. The latter notes correspond to the *te-e-e* of the red-shouldered blackbird. Each of these species has, besides the gurgle, a cluck; and the bunting I have also heard talking in a kind of low conversational *pip-pip* when spark-

ing the female. The Italian-Irish phrase of the coffee-head, *più-stiddy* ("more steady"), is as dainty-pretty as the tinkle of a glass bell in the air. It makes you laugh to hear the male cry "more steady," as he follows some coy and impassive female in drab (whom he has been persecuting with abject gallantry for a long time and driving to the very end of the branch on which she was perched), as much as to say, "I'm off, I'm after her; but look out, old boy, and don't lose your head. More steady there!"

The foregoing is all that can be said in favor of the "cow-bird"; for, as everybody knows, the males are polygamous and the females parasitical, corresponding to the European cuckoo, these two alone of the bird species making a business of laying their eggs in the nests of other birds and shirking entirely the cares and declining the joys of motherhood.[1] It is said no birds but those disgusting little tramps, the English sparrows, will associate with the cow-bird; but I have seen others feeding with them in pastures.

May 6, '96.— Yesterday was oppressively hot, an ideal bird day, trees in blossom and covered with young leaves, orioles shouting in the apple-trees and brown thrushes singing loud in old pastures. But to-day a terrific cold wind blows straight from the north, mercury nearly at the freezing point, fires built, and overcoats and gloves in order. Every air-train is bringing

[1] A few breeds of domestic fowl, such as Leghorns, Black Spanish, and Hamburgs, have had the habit of incubating their eggs breeded out of them by man's interference.

new birds north in full dress to open the courting concert under the greenwood trees; but how can the fun begin in such weather as this? Yet a bird's breakfast must be got, anyway; and I noticed the warblers working among the tossing willows' gold blossoms as hard as ever. They found the fattest worms on the southern side of the southern row of willows, and exploited only that.

May 8. — Warm and balmy day. My light-winged air troop (it spoils a good bird pun that the Greek "hoplites" were the *heavy*-armed) passed gayly before me in review through the half-mile avenue of huge antique willows, their evolutions, strange to say, consisting largely of standing on their heads. It took about twenty minutes for the procession to pass a given point, going up or down the row.

After a hard battle in the field (aching neck, dazzling sun, flashing and criss-crossing of new varieties in bewildering numbers, and a tussle with bird keys at home in the evening), the hot and tired student of the warblers proper, about the middle of May, say, will conclude that the study of these sylvan fairies with wings is at once the most exasperating, delightful, and fatiguing subject in ornithology.

Delightful because of their gayety, their variety of songs and beauty of coloring, and their jaunty elegance of cut. You never regret the time spent in studying them, — your chasings down the long wooded hillsides or up the shady glens or round and round the cedar or elm or apple tree where they live their happy lives.

When all is said for the black-and-white creeping warbler, the silver chips of sound let fall in a tiny shower by the pine warbler high up somewhere in the solemn grove of pines, the constant pleasure given by the abundant roadside yellows, the cheery song of the chestnut-sided (dubbed by me "Little Breeches," from his last two notes), the lazy, wheezy *zwee, zwee* of that sumptuous idler, the black-throated blue, or the *beseech, beseech, beseech ye* of the common Maryland yellow-throat, or the sharp cicada-like notes of the flashing nervous redstart, — when all is said of these that can be said, it still remains to be affirmed that the peachblow vase of warblers, the one who bears away the bell from all competitors, is the Black-throated Green, that constant companion of one's walks in spring and summer, that cheerer of the underwoods, the gayest little Mark Tapley of them all. At home, in the cedars, you hear him in the morning, at noon in the still forest of pines, at evening in the cedars of the pasture, — everywhere these golden-cheeked clamberers, winding their little silver bugles, — *see, see, see,* SEE, *see,* or *pee, pee, pee,* TWEE, *twee,* — the tinkling laughter of the air, the gayety and sunshine of spring embodied in a voice. Perhaps the bird is so happy because passing his life wholly amid the fresh, fragrant cedars, where he is safe from birds of prey. (I have thought that perhaps so many of the other songsters get their plaintive notes from the continual terror their ancestors and they have lived in.) Sometimes you will hear a black-throated green with an amusing,

slow, asthmatic drawl, — low-pitched, as if greeny had a bad cold in his head. It then seems as if he were still trying real hard to be gay, and his "Oh, I'm so *hap*-py" has only a slight tone of despondency. Sometimes, though not often, they have silent spells, and occasionally utter a whispered, dreamy version of their song. I remember that once, as I was passing through a great lonely orchard, one of them flew along beside me from tree to tree, evidently enjoying human society.

This spring I watched a Prairie Warbler build her dainty cup of a nest in a small cedar. It lies now before me, lined with softest white hair and an abundance of tiny feathers. She was quite horrified to discover me ambushed behind a tree, and pointing my opera glass at her just as she was fitting a straw into the nest and scratching around with her claws to give the nest shape. This was in a little secluded natural park, or paradeisos, scented just then with apple blossoms, green with grass and cedars, and surrounded by forest trees, the city lying dim and silent in the distance. Calling from day to day, I at length ventured to peep in during the absence of the owner, and found a clutch of tiniest eggs blotched with cinnamon. From among them I removed a huge sooterkin of a cow-bird's egg that would have ruined the brood. (But I might as well have left it, for either crows, jays, or boys soon rifled the nest.) I had scarcely concealed myself after hurriedly abstracting the intruded egg, when, as the "Arabian Nights" stories say, the winged genie

arrived: did she notice the absence of the foreign egg?

By May 8 some speckle-breasted Oven-birds had arrived, and were making the woodlands ring. John Burroughs's capital mnemonic catch-phrase for their energetic song — teacher, *teacher*, TEACHER, TEACHER, TEACHER! — is faulty (for birds in this locality, at any rate) in one point: the last note is almost always *teach*, and not *teacher*, like the others. See Appendix.

The cedars and oaks were full of restless Black-and-white Creepers, almost comical in their little Sing Sing coats, or mourning jackets, and their eternal cry of *busy, busy, busy, busy; busy, busy, biz.* They are good company in the lonely woods where few other birds are to be found. I have met them far in a desolate tree-swamp, where the stagnant waters moistened the roots of huge ferns and marish mosses, and the only other signs of life besides trees and plants were the mosquitoes and the sudden silent departure of a great hawk disturbed by the cracking of a dry twig under my foot. In this place a pair of creepers were imitating the motions of the earth,— the revolution on its axis, and the forward range through space; for they were spiralling about the tree-trunks, and also swinging around the orbit of the swamp. I once timed the song of a creeper, and found that, when he wasn't eating something, — which was pretty often, — the notes came out with the regularity of a machine by the time I had counted from thirty-four to thirty-eight. Once, when he was devouring a moth, the time for his song came;

and he uttered it as well as he could. He was an intermittent geyser: when the fountain of song in his breast rose just so high, the valves of his voice *had* to play, whether or no.

During the spring of '96 I discovered and watched from time to time the nests of five pairs of brown House Wrens. All were located in old apple-tree limbs, and entered by small knot-holes or by the holes made by woodpeckers. Besides most jolly singing there is usually good fun to be had in watching the skirmishings and conflicts of the nervous and mettlesome little male wren.

The first to arrive in the abandoned apple orchard near me, which has been for years one of their favorite breeding-places, was a male, on April 26. Others dropped in from Florida, and in a few days the females came. By May 8 they had all paired off; and one of the little Bubbly Jocks, especially, was running over with joy. The wife was part of the time peering into holes in the trunks of the lichened apple-trees, and part of the time looking for nice pupa-cocoons in the old stone wall. The very second that Jenny would begin in a low voice to say something, Jackie would interrupt with an excited ecstatic remark: —

Jackie. — Oh, I'm *so* happy, oh, oh, oh! What a fine morning! Yes, yes, yes: you are quite right in what you are going to say, my dear. It *is* a glorious old abandoned sunny orchard, oh, oh, oh!

Jenny. — But, my — [Jackie as above] foolish husband — [Jackie *ditto*], you know — [Jackie

do.] I must — [J. *do.*] get food — [J. *do.*] to feed — [J. *do.*] the eggs — [J. *do.*] I am — [J. *do.*] going to lay [J. *do.*]

Jackie quite upset my gravity by his delirious joy, and apparently conquered the phlegmatic mood of his spouse. She seemed to say, "Well, there's no getting rid of this silly little husband, so I might as well go to housekeeping. Come on, Jackie, let's hunt for a tree-hole."

One day, after the nests had all been selected and the females were brooding the eggs, I paid a call on a certain pair, in going my rounds among the nesting birds. I found the male in a great state of commotion over a downy woodpecker, whose head was sticking out of Jackie's window. The valiant and nervous wren was flashing back and forth in front of the hole, and giving it to downy with a vengeance, though he stood just a little in awe of him, owing to his superior size. But he stuck to him, downy popping his head in and out, in his vain endeavor to avoid the wren and yet give him a Roland for his Oliver. Jackie would sometimes slip slyly around in the rear of the limb behind a projecting piece of bark, and, when downy's head emerged, flash at him, and give him a tweak. The bird in the hole at length came out, whereupon there was a change of rôles,— the now suddenly silent wren doing the dodging and the other trying in vain to get near him. Before this game of tag began, and while the wren was making such a fuss, the tree was visited by an inquisitive chippie, who hopped about, and seemed to say: "Is it a snake?

What is it, brother wren? Can I be of any assistance?" Then came a male yellow warbler, a male indigo bird, a king-bird, and, finally, a redstart, all attracted by the commotion. Presently the wren flew off; and the downy perched on a dead branch, wiped his bill (a bird seems to wipe his bill as a woman licks her lips without knowing why), and preened up his feathers, as much as to say, "Lively fun we've been having; and I whipped him, too."

Three or four days afterward I found the male wren carrying cocoon-titbits in to his mate, announcing his coming every time by a little burst of song, as if to reassure her nerves before he descended the dark hole at the bottom of which she sat. He arrived with food once every two minutes, by the watch. After a spell of work he took a rest of ten minutes, singing all the while, and then started off again for food. A few days after this I found all desolation and silence. I smelled boy at once, and fresh "sign" was revealed every second, until on rounding the tree my heart sank at seeing a pile of fresh chips; and, looking up, I saw the hole chopped by the little wretches, and the sticks of the nest protruding.

The two other pairs of wrens in this orchard raised their young successfully. One of them had a narrow escape, though, from a big friend of theirs. Finding so many nests robbed, and finding all silent about this nest No. 2, I climbed the tree, in a sort of blind rage, to take a look down the end of the dead limb in which it was. What was my horror when the limb

broke in my hand! and, to add to my discomfiture, the eggs which I rolled out were warm. I hastily and carefully returned the eggs, and thrust the piece of wood containing them down perpendicularly in a bunch of twigs beside the remaining portion of the limb, and tied it with a string. The wrens were absent and did not discover me, and probably, after puzzling over the matter on their return, concluded that some natural earthquake or other had played the trick on them; for repeated anxious visits on the part of a certain guilty, hulking mortal showed, to his great joy, that the nest was not abandoned. In fact, I often watched the carrying in of food to the young, and saw that they were safely launched on the aerial ocean, their future home.

I am convinced that there is no positive antagonism at all between wrens and English sparrows, and that, if the wrens have retired from the towns (as they have), it is simply because the sparrows outnumber them ten to one, and a month before their arrival take possession of the few available knot-holes and boxes. The wrens are crowded out, in the terrible struggle for the few places that are provided. But there is no help; for, if the sparrows were given all the boxes they wanted, they would multiply so fast that the wrens would still have no chance, and the sparrow nuisance be but increased.

In proof of the entire absence of antagonism between English sparrows and wrens I would say that I made repeated visits to an old lane where English sparrows raised broods close by the apple-tree domicile of a pair of wrens; and,

although the sparrows were all around the latter, even in adjoining trees, I never saw the least sign of disagreement between them. There was room for all, and all were happy. The wrens could roll up their sleeves and polish off Johnny Bull at any moment: the Johnnies had found this out, and there was peace.

On May 9 arrived two resplendent scarlet Tanagers, with their meek olive-green wives. The males made the wood ring, as they traversed it high up in the tree-tops, with their far-calling and far-answering shout of *peeu'*, *peeu'*, *pee-a'te tu you'*, *peeu'*, which one could fancy caught from a vanished race of the cities of Yucatan, where these birds have always wintered. Other tanagers that followed them varied the phrasing very much. As will be seen when I speak of my discoveries among the bobolinks, it is evident that members of the same brood or near relatives in any single species will have very similar notes, while others will differ from them. As for the first arrivals just mentioned, coming as they did before the new leaves were fairly out, one fancied that they might drop fire on the dry leaves as they passed. No wonder they are rare; for what a mark for the gunner and the hawk the males are! — these "flame-colored prisoners in dark-green chambers, who have only to be seen and heard, and Death adjusts an arrow." A bird does not like to have an opera glass pointed at him, any more than a human being does; and one of my tanagers expressed his opinion of my manners by repeatedly saying to himself, *Take care* (or *tip-where*), *tip*, *tip*.

The females I have heard at other times utter an alarm call of *tip-where.*

Two of our common birds have the extreme elegance of high breeding and noble blood. I mean the bird of the dark slaty coat and ink-black eye, the Catbird (or Carolina Mimic) and the wax-wing Cedar Bird or Cherry Bird. Both have the quiet reserve and low tones of the drawing-room. The black-eyed mimic's voice contrasts strongly with the loud tones of almost all the other birds of about his size around him, — the robin, jay, tanager, cuckoo, oriole, and flicker. It sometimes seems like a soliloquy or a reminiscence. It is like an air sung by a gentle lady to the accompaniment of a low-toned flute, "an accent very low in blandishment," the song purling on like a stream running over mossy stones and turning many an angle as it goes. Sometimes the Carolina mimic gives you the brown thrasher's very notes, as if imitating that thrush, and not the birds that the thrush himself imitates; for at such times his voice approaches, if not equals, the loud serene tones of his brother mocker.

Again and again, when looking up into some tree-top for other birds, you will be surprised to see there a little silent group of the wax-wings, or Cedar Birds, dressed in neat-fitting drab and mauve silks, and cuddled close together. You think of Charles Lamb's "party in a parlor," "all silent and all damned." Ovid would have said "metamorphosed," and made them silent for some such reason as was Philomela, whose tongue Tereus cut out, so she could not inform

against him for his crime against her. She was afterwards changed into a swallow. As you think of it, the mystery grows why such beautiful birds should be so exceptionally voiceless, save for a very faint lisp or a soft muffled sneeze, which contrasts curiously with the loud whistles of the Baltimore oriole, who often hobnobs with them in the blossoming apple or cherry tree. The mistakes one sees in newspapers about birds are amusing. I recently read in one the communication of a person who said he or she had "been hearing the high notes of some cedar wax-wings." Mrs. Olive Thorne Miller speaks of a pair of chats as having "removed their infants," "hurried them out of the nest as soon as they could stand." Her chats might have been cunning, but they were not quite such cunning *chats* as to carry their kittens off in their mouths. She of course meant they enticed them away by calls.

Of the four interesting vireos heard in our tree-tops in spring and summer (the warbling, or *tee tŭ wuh* TEET bird; the yellow-throated, with his *Cheer up?* I'M *here;* the audacious little white-eyed; and that gliding ventriloquist, the red-eyed), the last two are by far the most attractive. If a student of birds finds himself awakened some June morning by a loud, ringing, distinguished whistling or carolling that he can't identify, and rushes out half-dressed, and has an exciting chase to identify a bird that he is sure must be a foot long, he will laugh on discovering that it is that wag of old lanes and swampy bosks, the White-eyed Vireo, or white-

eyed greenlet, as he used to be called. His song is often loud and energetic, like the rose-breasted grosbeak's, and its vehemence quite astonishing for such a mite of a bird. The white-eyes are great mimics, and I believe no two of them sing alike. I have heard one say *chut-wuh-whee'*, *tee-tee-tee'*, *twut; chut mew'*, the last sound being the cat-bird's mew. Another made the echoes ring and ring again with startling vehemence as he whistled *tip where*, *tip where*, then changing to *tip er whee'*, *tip er whee'*. It is this little joker who is so sarcastic on the newspaper men by tearing up one of their productions, when he can get it, to line his nest.

The "Red-eyed Vireo" is poorly named, for the red iris cannot be seen a few feet away. Wilson Flagg called it "the Preacher Bird," because to his ear it seemed to say, "You see it — you know it — do you hear me? — do you believe it?" etc. But American preachers don't exhort in any such staccato fashion. I should call the bird (and do so call it) the Parlez-vous Bird;[1] for, if ever a bird spoke French (and of course the oiseaux in France all do), this one speaks it. It is well that one bird at least should remind us of our indebtedness to the brave French pioneers in the settlement of the continent. The inflections and abrupt snappy tones of the "red-eyed vireo" can't be worded in any other language. He says: *qui est? — bien — c'est bien — oui, oui, oui — tout de suite — qu'est ce que c'est? — je prie vous — pas si*

[1] That every nation hears its birds speak its own language is illustrated by our whippoorwill, which winters in Brazil, where to the Portuguese it says *Joam corta páo* (John cut wood).

vite — s'il vous plaît. These phrases, at any rate, I wrote down from the bird's dictation; and they can be verified by anybody.

The Yellow-throated Vireo has the same rising inflection in the first part of his song and a falling inflection in the last: *Cheer up?* I'M *here.* I have heard individuals of this species sing, SEE *us?* THREE *of us*, the latter half uttered in a lower tone and with the falling inflection.

May 15, '96, was the Baltimore Oriole's day (the Orchard is very rarely seen about here.) All day the elms and apple-trees were ringing with his liquid-sweet cherry talk. How the blood leaped to the heart when from some tree-top his startling notes first rang out, so distinguished in *timbre*, or tone-color, so brave and sweet, as if he were afraid of no one, and the world was but his ox-heart cherry to plunge the dagger of his bill into: *Kĕ-che'rry, cherry sweet, kĕ-che'rry.* Or, again, *cherry, cherry, sweet cherry.* Then presently: *O cherry, cherry, I'll eat you: O cherry, cherry, I'll eat.* And eat he and his brother Orchard do, with a vengeance (curious that the Baltimore oriole should betray himself by incessantly talking about it), sticking their bills into hundreds of cherries out of pure wantonness. They are very dainty about their eating. I have seen the Baltimores eating the wild cherry, first macerating it with their bill, with wonderful dexterity in not letting it fall, and then tucking it away under one claw while they eat the flesh, never swallowing the

stones, as do the golden-winged woodpeckers, for example. These two species of orioles spoil whole vineyards of grapes in New York, getting drunk on the sap, and going through the vineyards row by row, puncturing the whole lot just for fun. But their fun is turned into mourning by the sharp crack of the guns of the enraged viticulturist and his men. The orioles are great mimics. Nuttall gives several of their songs which are quite different from mine. I have heard orioles say: *You* SEE, *you* SEE? *Teteer-Peter; punkin eater, eater.* Joseph E. Chamberlin tells of one who said *Jupiter', Jupiter', Jupi-Jupi- Jupiter'*, and came back every year to say the same. My *cherry sweet* birds formed a rather limited group. I would occasionally hear others of the family in different parts of the town. Several miles distant I heard another soliloquizing as follows, while he exploited an apple-tree: *Churry, churry, chŭ-peep'-up, pee-up', pee-up'*, never varying from this form. Such a variety in the notes of a species make you think there's something in bird talk more than we understand. No wonder early races have always believed birds could talk.

The rusty red of the orchard oriole will not compare with the gaudy orange coat of the Baltimore, — the golden robin, or hang-bird; and his song is inferior to the unctuous contralto of the latter, lilted out amid the apple blossoms, — his *Take care, take care, quick.* The Baltimore's carol is like that of the rose-breasted grosbeak, — loud, triumphant, with an unmistakable ring of sincerity and strength.

Nuttall says he never heard the orchard oriole in Massachusetts. Neither am I conscious of having seen or heard it. My eyes are exceptionally long-sighted and hearing normal, and there would have been no trouble in identifying this bird with his tint of brick-red, nervous activity, and rapid, unanalyzable concatenation of song. Nuttall travelled much in the South, and says the Baltimore oriole gets his *cherry* notes from the Carolina wren.

As the orioles dash in upon the blossomy North in early spring, hot and fiery from the South, and take possession of our orchards, they seem to remind the Yankee farmer that his orchards are for something besides hard cider and vinegar and rye-an'-injun apple-betwaxt. They hint of the regal abundance of the lands of the sun in Central America where the orioles winter, and by their sang-froid in appropriating the orchards remind those of us who have lived South how every man's orchard there is free to his neighbor to enter and eat his fill under the trees.

It is quite a difficult thing to secure a fresh handsome nest of that American weaver bird, the Baltimore oriole, hanging, as they do, high up on the tips of the elm branches. I made three trips and worked for two hours before I succeeded in snaring one. My blood was up; and I was determined to have one if it took all summer. On the first two trips I failed miserably, and got nothing but a red face and a huge perspiration, but finally succeeded by — On second thought I won't tell how, for fear boys

will take my method to rob the nests, instead of taking a disused nest as I did.

The nest was a marvellously strong yet flexible piece of work. It was made of the tough silken floss of the inner fibre of the common milkweed (*Asclepias cornuti*); that is, of material got from the last year's stalks. It was rendered stiff and non-collapsible by an interwoven lining of horsehair. (I find smallish proportions of the milkweed floss in nests of the indigo bird and the prairie warbler also.) There was a kind of welt around the mouth, the material wound round and round, as if hemmed overhand style. This welt is useful to the parents in entering and leaving, and to the young birds, who perch there, when half-grown, to be fed. The bird found an abundance of horsehair in the next field, so she had fairly quilted the whole interior of the pensile pouch with it, stitching it in and out in a perfect maze of woof and interbraiding. I should say that there are five hundred floss and hair stitches in that nest, and it accordingly looked as picturesque as a stocking-heel that has been darned again and again by thrifty Dame Durden. How can the bird, albeit its black bill is so long and sharp, do such delicate work? Nuttall gives the key to the mystery, probably. He had a tame oriole that was used to feeding from his hand. If the closed hand was presented to it, the bird would use its bill as a pair of compasses to pry it open, and would try to open a person's lips or teeth in the same manner. "In this

way," says Nuttall, "by pressing open any yielding interstice, he could readily insert the threads of his nest and pass them through an infinity of openings."

Both males and females do the building. In the case of the nest I am describing it was the female. A favorite device of the little scold of a seamstress is the loop, by means of which she forms a kind of back-stitch, one loop of a long horsehair overlapping another as it is carried around the inside. (The bird has been known to get strangled by one of these loops while working head downward in the nest, and the distressed male bird helpless to save her.) In many cases I see actual single knots in the hair. Coiled around the lower half of the interior, for final finish, is a thick swirl of the all-useful and much valued horsehair. The mystery is where the birds (so many of them) get enough horsehair for all this cross-wattling and lining. What hunts they must have, and what keen eyes! They will, as is known, appropriate colored yarns scattered about for them; and a friend tells me of a nest into which had been worked a bright Japanese paper napkin. It is the Baltimore oriole, or golden robin, whose nest has just been described. The orchard orioles of New England also build pensile nests, though not so deep. But Mr. Ernest Ingersoll has collected testimony showing that in Southern New Jersey they have entirely changed the ancestral style of architecture, building nests directly on the boughs, and using flexible grasses and pine needles as material. In the more Southern

States orioles often build pensile nests entirely of the long tree-moss, *Tillandsia usneoides;* and there they construct them on the cool north side of the trees, while in the Northern States they usually select the warm eastern or southern side. The orioles, as has been remarked, make no attempt at concealment of their nests from man. But the Baltimore always builds under and in a bunch of leaves to avoid the glance of overflying crows or jays; and, although the swaying cradle is built deep to guard against upsetting in a wind-storm, yet it also usefully serves the purpose of almost completely hiding the brooding bird. The leaves also shed rain and fend from the sun, and the nest is usually waterproof. The only American birds whose nests bear even a distant comparison with the orioles are those of our two pretty marsh wrens (bottle-shaped nests) and the elegant purse of moss and hair made by the little California bush tit.[1]

A slight study of birds' nests and watching the creatures in the act of building somewhat lessen the mystery of the thing. The spherical shape is given by the body of the bird as she turns round and round and builds the nest *around her.* So even the marvellous nests of the Phillipine weaver birds (Ploceus) are constructed, although one of them builds first, from a bough overhanging the water, a solid rope, which then expands into a cup or hollow ball for the nest, and is further prolonged downward

[1] A cut of the last is given in Davie's "Nests and Eggs of North American Birds," p. 432.

into a long tube by which the birds enter and leave, like the vaulted safety passages of ancient castles or of the palace of Nisabic in the story of Habib. So also build our oven-bird, the English bottle-wren, and the social grosbeaks of Africa, whose grass-woven tree nests are built in huge coral-like colonies, two or three hundred of them in a bunch, looking like an umbrella or a native hut of grass. As a house is built around a chimney, as an Eskimo ice-hut is built around the man by his own hands, so a nest is built around a bird. She is going to rear a family; and so she makes her bed, lays down her mattresses, and pulls the coverlets snugly around her, that is all.

As I look out of the window where I write, I see a humble little Chippie (social sparrow, or hair bird) carrying a mouthful of soft brown material to line her nest with, there in the spruce. These birds deserve respect for the trust they impose in man, as well as for their long winter journey to Florida and Mexico. They are only a trifle larger than the strong-winged milkweed butterfly which makes the trip with them. They all know well the long trail through the air. The chippie family proved to be a constant pleasure. About five o'clock every evening the little red-capped husband could be spied brooding the eggs while his spouse went to get a bite to eat and take exercise. They reared five young, the nest being so chock full as to look quite funny. The old ones had to work like Jehu from dawn to dusk to keep those crying mouths full. (Birds in a nest are

fed in regular order by the parents. At least, I have seen barn swallows so feed their young, beginning at one end of the row of mouths at the edge of the mud nest, and each trip feeding the one next to the last fed. This seems absolutely necessary in order that all the young may live and thrive. (In a succeeding chapter it will be seen that my robins fed their young in the same impartial way.) First chippie egg May 12; began brooding May 16; on June 6, as I peeped into the nest, a chippie bomb exploded, the young birds flying screaming in all directions. One flew clear across the yard. I got two of them back into the nest. But they knew better, and wouldn't stay there five minutes. Had exactly the same experience with another nest later. The young clearly regard a nest once discovered as a dangerous place. The old ones in the second instance feigned they were wounded, etc.; but after I had returned the birds to the little cedar-tree, although they couldn't tell whether I had not put them up my sleeve or in my pocket, they stubbornly refused for over ten minutes to go and see. I was far off, watching them through the glass; and it was only when I turned to stroke some horses near by that, seeing my attention withdrawn, they visited the nest. The question is, Were their curiosity and anguish of the same degree and quality as those of human parents? If so, the Red Indian could not have shown a firmer stoicism and self-control. When I next peeped into their deserted nest, two weeks afterward, I found a spider had spun a web

over it, and made of the nest a palatial banquet hall.

During the past spring and summer we became well acquainted with the Indigo Birds through the chance of three pairs raising broods right around us. One pair (or rather the female) selected, at first, the currant patch as a desirable location, and finished, almost to the last hair, a pretty cup on a spray of one of the bushes. The branch, however, sagged so with the weight, and thereby became so open to the sky, that the bird abandoned it for a four-feet-high oak sapling in the shade of a great hickory in a rocky copse not far from the door, but ridiculously exposed to *my* gaze every time I passed; but she trusted me implicitly. The young chippies, close by, little brown fuzzy mites, were squeaking vigorously all day and lifting up their wide mouths as their parents fed them, which perhaps stimulated the maternal instincts of Señora Indigo, and may have partly led her to make her choice of a site where all seemed so charmingly domestic and retired. Her delay threw her a week behind the other birds, who got their broods out and away that length of time before she did. So she was in a great hurry, and worked industriously at her nest under my very eyes; yet she would not slight her work, but made it to her mind, finished in every particular. The male was a cheery, animated bit of azure, and even on a depressing rainy day, when other birds, except the robin, thrasher, and wood thrush, were silent, kept warbling bravely and sweetly through it all. He had a favorite perch

on the tip of a high cedar, and all day long he was there singing his *whee, whee, whee'; chŭ, chŭ, chŭ, whee'; whee, whee, chee' chee.* In his more impassioned carols the last notes were a lisping, husky *sweetsie* (he was calling to his mate below, I guess), which seemed to come from way down in his throat, and as if he were exhausted or out of breath, as, indeed, he might well have been; for this smale fowle became, I am sorry to say, at times an almost unendurable nuisance, through the iteration of his song several thousand times a day. He began always at orange dawn (about half-past three) on my side of the house, and gave me a matin in indigo on a saffron background of sky; kept it up all day, when he was not eating; and closed with a nocturne in green and azure and indigo as he sat outlined against the sky on his cedar-tree perch. I even saw him singing with a green worm dangling from his bill. There was a lull in his song while the young were growing up; but in mid-July he began again and kept it up for a couple of weeks more. I lost most of my morning sleeps for a month; for closing windows and putting fingers in ears was only a partial remedy. During the day I had to move writing materials and books to the other side of the house, or fly sometimes to a city library to work. I am convinced that, if Carlyle had had an indigo bird at Craigenputtock, we should never have had "Sartor Resartus" — unless this Sir Morose had devised waxed-cloth plugs for his ears, or invented a bunting-proof study, like the "rooster-proof" one in Cheyne Row. One can understand the

feelings of the lady who (a neighbor tells me), when asked if she was interested in birds, replied, Yes, she was: she would like to wring all their necks, for she was unable to sleep a wink any morning after three o'clock, owing to their noise.

Señor Indigo from Yucatan appeared to be a rather shiftless husband, did not seem to understand his duties as his neighbor, the red-capped hair bird, did. He never brought his silent, bright-eyed wife a mouthful of food while she was brooding her eggs, nor relieved guard while she went for food. "*He* shift a trencher, *he* scrape a trencher!" No, indeed. After the style of the Indian brave, he seemed to say, "My woman attends to all that drudgery." So all day long the little swashbuckler did nothing but eat, and sing a sweet defiance at that rival up on the neighbor's crag, the two sometimes gradually approaching each other through intervening tree-tops and engaging in pretty vocal challenges while the eggs of the females were getting alarmingly cold, and domestic interests all neglected. They were just two indolent little Spaniards, with gay blue capas and sombreros, sauntering in the shade and tinkling their guitars.

The indigo bunting would be horrified if he had to perform the duties required of the male cassowary, emu, or ostrich. To the last-named the female leaves the entire task of incubation. He, however, dodges a part of his job by letting the sun keep the eggs warm in the sand during the daytime, only brooding them at night. The indigo would not like to shake claws, either,

with the shrewd African hornbill, who, in despair of keeping the eggs safe, takes heroic measures, and, with the consent of his spouse, plasters up the entrance to the nest with mud, leaving only a small aperture through which he conveys food to the prisoner during the entire time of her incubation, *she* growing fat and he starved to skin and bone. But these two cases are exceptions; and among nearly all other birds (be it said in exculpation of my indigo bird) the male is not in the habit of helping to incubate the eggs. Among the sparrow tribe, to which the chippies belong, the males do more or less help in this task. Moreover, Mr. Turveydrop Indigo redeemed his character a little when the young were hatched. As soon as he found it out, which was not for some twelve hours, he exhibited a little curiosity and a commendable paternal interest, bringing food in his bill two or three or four times a day (he was closely watched). Once, when the female flew away for food, he hopped down (he had been waiting patiently with a tit-bit in his mouth), and took a good look at his progeny, pecking softly once or twice at them, as much as to say: "Be good children, and obey your mother. Good-by. I must go and sing." When the young left the nest, he developed much more interest, and did more in getting them food, and in scolding cats, and exhibited a truly normal affection. (I noticed this in several other cases of the indigo the same season.) So that perhaps, after all, in the early stages of the breeding time he "keeps shady" by wise instinct; for his bright color might call

attention to the nest. The male tanagers, as well as the brilliant cardinals, keep away from the nest until the young are hatched, when they are very assiduous in helping to feed them. Burroughs says that the enlarged fac-simile of the indigo bird — the blue grosbeak — is in habits also like his small brother, and lets his wife toil for the young while he sings.

The song of the Bobolink is a musical sky-rocket struck by lightning. It is typical for bird-joy, and is the characteristic song of the New England summer. The bobolink has too long been regarded in the light of a mere humorist: it is time to recognize our priceless treasure in this bird before he is exterminated by Southern gunners. I believe no two bobolinks in the world sing the same notes.[1] Compared with the molten music of the bobolink, even the brown thrush's carol sounds a little like a rustic plain-song. You must hear the two actually singing at the same moment to realize this. The bobolink's song is like the music of a Wagner drama,— long unbroken, soaring harmony, with no see-saw cadences letting you down every few bars.

> "Rapt, ringing, on the jet sustain'd
> Without a break, without a fall,
> Sweet-silvery, sheer lyrical."

And this is not to say that the brown thrush's song, lilted out in full-throated ease, is not

[1] Burroughs notes ("Birds and Poets," p. 121, Edinburgh pocket ed., 1884) that the bobolink does not sing the same in different localities,— New Jersey, the Hudson valley, and central New York, for example.

serenely beautiful, heard alone in early spring, or from some tree-top at morning or evening. Yet of the strains of even the sweetest mocking-birds one soon tires, they are so monotonous. The same is true of many of the warblers. I met a little yellow warbler this morning who did nothing but sing *wee, wee, wee, wee, tschitscha-tschitscha wee*, with a monotony that would soon drive one frantic.

The bobolink gets his name from the opening notes of his spasm or shatter of song,— the *ko-link* notes, or variations of that theme. The love carol of this *musicæ doctor*, when he gets on his gold hood at Commencement time in May or June, and launches his song over the deep-grassed meadows sprinkled with buttercups, resembles a sky-rocket in more ways than one. You may compare the distinctly enunciated, fluted prelude of the strain to the rise of the rocket into the sky,— then a pause, a turn, and shattered into a rainbow of color the fiery music spray falls to the earth. (And, curious to note, the bird, like the rocket, drops into the grass with a distinct hissing sound.) Or it is as if the sound of an orchestra of tambourines, violins, and silver triangles, should come to you through a screen of intersecting walls and streets; or as if there were borne to your ears through winding valleys and past jutting crags the Christmas chimes of a distant city, ringing out by night, when snow is falling thick.

No human ear can follow, and therefore no musical instrument imitate, all the song of this bird, any more than you can count and repro-

duce the sounds made by effervescing champagne. That hearty old New England musician and bird lover, S. P. Cheney, who reduced all our birds' songs to musical notation, records that the bobolink was too much for him. He only gives a fragment or so of its song. An English lark, says Burroughs, that mimicked all the birds around it, maintained strict silence in the presence of the bobolink. As a physiological fact, this minstrel of England's hawthorn-bordered meadows hasn't the vocal organs to imitate a bird that has a chime of bells and a waterfall in his throat. One of the mysteries of the music is that it is almost destitute of *distinct* vowel sounds. It is as a bird's song might be in Houyhnhnm land, if the birds there sang as the inhabitants talked. Sometimes this little king of the meadows pulls but one rope of his chime,— the *ko-link*, *ko-link*, *kĕ-chee'-e-e*, a most human-like melody, as if he had stolen the opening notes of a flute score.

I spent an hour, the first day I became interested in bobolinks, sitting flat on the grass (with a half-dozen of the male birds floating and gliding about me), and trying in vain to take down that delirious inarticulate bubble and rush of sound that follows the opening flute notes. Pronounce the *ch's* in the following as in *child*, and speak, whistle, or play on the flute the whole without a pause as fast as ever you can, and you will get a very faint idea of a song that is a tumult of gurgles and flutings, like the working of silver pumps in fairy wells or the tinkle of water-drops falling into a cis-

tern, or the babble of a swift brook through obstructing stones: —

Ko-link', *ko-link' kĕ-chee'-e-e; seeble feeble thimble rig phew shew, chĭ-chĭ-chĭ, chu-wich'-chu-we, chu-wich'-chu-wich'-chu-wee'*, *chu-wich'-u-wichy, twutter, twutter, spink, spink, spink.*

It must frankly be confessed, however, that this is not so authentic or personal a record (I have introduced three of Wilson Flagg's words into it) as the following one which I got next day, when for half an hour I interviewed a solitary bobolink, singing all that time very close at hand. I got his song down by taking it in sections, and noting each again and again, paying no attention for the nonce to the other portions. When all was done, I compared the whole as he sang it off, and can vouch for its accuracy in (approximate) number of syllables uttered,— or what we may call liquid consonant syllables,— and for its general identity with the original melody, although it is but a miserable skeleton of that, to be sure. The inventive or improvising powers of the bobolink must always be kept in mind. The full budget of tintinnabulation of my bobolink was as follows: —

Ko-hee'o, ko-hee'-e-e; quit su, quit see, quit see, O tweetu, tweetu, gurgle gurgle, twitter, twitter, twitter, spink, spink, spink.

Occasionally, I'm sorry to say, though not very often, he ended with a couple of discordant notes, like a robin's scream, or a kind of harsh *gr-r-r gr-r-r.* The word *gurgle* stands for a rich guttural sound, like the splashing of water. *Twitter* is unsatisfactory, but neither *a* nor *u* will

exactly serve as the first vowel. The pronunciation a Roxburghshire Scotch farmer, with a rich burr in his throat, might give to the word *twachter* is a better approximation to the sound than *twitter*. The section from *e-e* to the first *gurgle* is a froth-geyser of sound which it is impossible to analyze or accurately give the clang-tints of. I tried it often, and gave it up.

Going on with my bobolink studies, I met with remarkable proof of the bird's improvising and inventive genius. On May 19, reaching a rustic summit-house in the midst of a meadow yellow with buttercups, I discovered that I had invaded the precincts of another set of bobolinks. As the first one's song close by reached my ear, I saw at once that none of his notes or phonetic groups of sounds resembled those of Monsieur Kolink or of Herr Koheeo, either. His opening lilt was *peeo, peeo, link;* then came a water gurgle, the usual mélange or shatter, and finally *O peelo pee, twutter twutter twutter, chew-we' chew-we'-chee.* On my left at the same time sang one whom I instantly dubbed Sir Knight Kolin'sky from Poland. He *began* with two delicious liquid gurgles, and went on with *wo-kee'-o-kee', ding-a-ling* [mélange], *kolinski.* We have now reached No. 5, who began with a *ke'-e-e-e-o* (a penetrating sound, like the hiss of green wood burning, which he seemed to have stolen from the red-winged blackbird), and continued with *chu ting-a-ling, kolinski*, etc.

All described in the foregoing paragraph were in meadows remote from each other, and

two or three miles from the abodes of Kolink and Koheeo, respectively.

Some three miles distant I found a group with a family resemblance in their song: they all belonged to the *spink*, *spank*, *spink* clan; and these syllables were very plainly uttered, whereas before I had heard only *spink*, *spink*, *spink*, and that not very plainly. It was clear to me at once that Bryant and Wilson Flagg had happened upon one of the *spink*, *spank*, *spink* family when writing their poems "Robert of Lincoln" and "The O'Lincoln Family," respectively.

I give here a conspectus or syllabus of the initial flute notes of fifteen bobolinks, premising that neither vowels (except long *e*) nor consonants are to be considered as being so distinct and clear as in human utterance. One might think from the table alone that Bobolinkese was a language like the Hawaiian, — all vowels nearly; but it is not so: —

No. 1. Ko-link′, ko-link′, ke chee′-e-e.
2. Ko-hee′o, ko-hee′-e-e.
3. Peeo, peeo, link.
4. [Two gurgles, then] wo-kee′o-kee.
5. Ke′-e-e-e-o.
6. Ting, tong, tong.
7. Ping.
8. Keo-link, ko-link, kee-kee′-uh.
9. Who-o′, whee′-o, whee′-uh.
10. Ko-lee′, ho-quee′-e-e.
11. What cheer, Kolinski?
12. Ko-link, ko-lee′.
13. Ke-ding, ko-link.
14. Wolikink-o-wo-kee′o.
15. Queela, queela, quee.

Every precaution should be taken that the

race of bobolinks does not become extinct through the work of hunters. For, under the name of "reed bird" in Pennsylvania and Delaware, they are shot to feed those monstrous disciples of Heliogabalus, the Philadelphia gastronomes; in the Carolinas, where they work fearful mischief with the rice fields, under the soubriquet of "rice bird," they are shot and spitted for the fire; while in Jamaica, under the appellation of "butter bird," they probably run the gauntlet of another fusillade. Whether they are shot in Brazil, beyond the Amazon, where they winter, I do not know. They show remarkable good temper under such trying circumstances, and are not a very shy bird.

The habits of Robert of Lincoln are as interesting as his song. Bob seems to be continually bullying his wife, as much as to say, "Why don't you keep down there out of sight?" The female consequently wears a sort of dazed, scared look; but, as she is swifter of flight, she dodges Mr. Bob every time, or, if taken at close quarters, pops down in the most ludicrous way into the tall grass, where she is never pursued. Mr. Conquedle scorns to go into a hole for the little brown minx. With their handsome relatives, the red-shouldered blackbirds, the bobolinks always fraternize perfectly. The cousins resemble each other in manner of flight and general habits.

Are bobolinks telepathic? At fixed times, moved as by a common impulse, they will suddenly rise from all over a great meadow, and, wheeling around and about for a moment in

an ecstasy of song, flying heavily and slow as if loaded with gold, sink in a long steady glide, with motionless outspread wings, until they drop into the grass,—*not* beside their mates, as the sentimental poets always put it (they would not betray the nest in that way), but simply to feed on the insects and seeds that form their food.

IV.

FLOWERS AND BIRDS.

"Then came the jolly Sommer, being dight
In a thin silken cassock coloured greene,
That was unlyned all, to be more light;
And on his head a girlond well beseene
He wore, from which, as he had chauffed been,
The sweat did drop." — *Spenser.*

In the good old days at Yale (*consule Planco*, of course,— the phrase is a trifle frayed) we used to time the arrival of summer by the appearance of President Noah Porter's panama hat. What cautious delays he exercised, as the season of hot weather approached, in putting by the tall silk hat for the dignified Derby-style straw! It was apparently the same old summer panama of years before, costly to start with, but rejuvenated each year by the hatter. The president's straw hat and the solar system were correlated. He had a sympathetic understanding with the sun, and that dread monarch never played him false. There was no longer a shadow of doubt about the propriety of sporting your straw when "Prexy's" appeared. And it never did appear until nigh upon the joyful, late-in-June days of alumni reunions and dinners, and brass bands, and Commencement festivities, when the smile of the genial-grim face

under it seemed brighter and pleasanter than ever, if possible, by virtue of that light and cheerful old white straw.

Everybody smiles in June (or ought to), because it is the pleasantest season of outdoor life. We are troglodytes in winter: in summer we emerge from our caves, and *live*. The brain has been alive, it is true, but at the expense of the muscles and liver. Now the balance shall be redressed.

The wonderful cures of sick people effected by Father Kneip at Woerishofen in Bavaria, through a regimen of water and outdoor exercise and barefootedness, give us the hint very plainly as to what is the matter with us. Bare feet and naked sun-baths in summer would make big holes in the doctors' incomes. On your own lawn, at least, you might get the cool feel of the lush dewy grass to bare feet (I have systematically done so this summer), or on the smooth sand of the seashore. But, if too fastidious for this, why could we not adopt the sandal, — the open shoe, the leather sole strapped to the feet by thongs? My English authorial friend Edward Carpenter sends me cuts of two handsome sandals he has invented. Mr. Carpenter is an English Thoreau, who lives close to the bone on his fruit farm in Leicestershire, and practises what he preaches. Shall the smart Yankee be beaten by an Englishman?

Outdoor life and plenty of fruit,— you can't be miserable if you have these. The first fruit to ripen in our Northern gardens is the Currant.

Nothing prettier than a great patch in full red fruitage. I remember some in old sunken gardens in Marblehead and other Essex towns that fairly reddened the ground where they grew: they somehow gave to the grounds an air of old-fashioned elegance and homespun beauty.

A health to the currant in a glass of its own delicious wine! How prettily the golden and blood-red clusters show amid the leaves, or pendent high in air from some aspiring central stem! The currant is the grandest irrigator of your biliary tract extant. The Devil made a bad liver, and the Lord checkmated him with the currant. That may be antiquated theology, but it has a basis of truth. After a few days of currant-eating the severity of my judgments on the wicked world mollifies perceptibly: the critical barometer rises several degrees. It was Giant Despair who fell into a fit when a sunshiny day came. Bunyan says so; but he forgot to tell us that Monsieur Giant had also, probably, been mousing currants in the garden behind the castle.

As soon as your currants are fairly red (or straw-colored), you will sally out in the cool of the morning in July, with old clothes on and a big panama flapping about your ears, and, sitting down on the mulch of leaves and dried grass, proceed to strip off the acidulous globelings. If you spy (as you often will) a wasp's nest pendent from some branch by its slender but strong and tenaciously glued stem, don't inspect it too intimately, lest old Dangle Legs,

the parent, may dash up, and give you a souvenir you will never forget.

As you leisurely fill your basket, you see far off the city winking through the heat, the sky peeps through the trees in patches of blue that couldn't be beaten by a Japanese napkin. Here close at hand towers up the mighty banyan forest of the asparagus bed,—as high as the Cologne Cathedral to the buzzing swarms of insects among its blossoms. The honey bees are busy among its little drooping bells, their probosces rarely reaching to the bottom, and half the head poked in, to boot: from flower to flower they flit, working their toes industriously between whiles, like old ladies knitting as they walk and talk.

Where will you find a prettier or more vacant-soothing task than picking over currants?

"Phœbe, idle Phœbe, on the doorstep in the sun,
Drops the red-ripe currants through her fingers one by one."

A shapely woman's hand may reveal all its elegance in this work. The moulding of bread, too, will give litheness and flexibility to a lady's fingers. To bake a good light loaf of rye or whole-wheat crusty bread, and cut it up to feed the hungry, is the crowning grace of a woman. The "new woman" is forgetting this,—forgetting that the new must not *displace* the old, but be an enriching and broadening of it. When each sex has learned its own peculiar tasks, it may superadd as many accomplishments of its opposite as it has the power to acquire.

But to return to our muttons. Mrs. Lydia

Maria Child, when she and her husband lived in Wayland, Mass., near Boston, had a glorious currant garden by the sleepy Sudbury River. Having no children, they had reduced life to its most satisfactory terms by doing their own house and garden work. Mrs. Child possessed the art (inimitable by others, I think, for I have tried it, and failed) of putting up raw currants in clusters right from the bush, in sealed bottles, and so keeping them far into the winter! She would select, I am told by one who knew her, the driest and sunniest day possible,—and the middle of the day, too,—and drop the ripe bunches into perfectly dry wide-mouthed bottles, and then seal them with wax. Perhaps she dipped the ends of the stems, too, into wax. Anyway, her fruit kept for months. And how could it help doing so at the request of so sweet-natured a lady?

As the season rolls on, the currant is followed by the Cherry. The great fun in cherry time is in picking the black or red globelets off of the tree yourself and popping them into your mouth as you pick, or dropping clusters far down to a waiting friend below. The poet Thomson was right in eating his peach off the bough where it hung (you remember you told that story in class one day over twenty years ago, Professor Beers). Live fruit is the only kind fit for eating.

But you are up in the tree. Aha! what a prospect! The tree, say, is a gigantic one, semi-wild, "escaped," as the gardeners say. You are at the very top, of course, where the dead-ripe

black-hearts hang. Beneath and far around lies the green landscape, spotted with clumps of trees. You realize now how air navigation would enlarge the vision of that poor worm, man; and — heavens! what was that? It is a toss-up whether you are more startled or the bird: it was a robin, who never dreamed of finding an animate scarecrow up in *his* domain, the air; and with a flash he darts off on a side tack.

One of the earliest flowers of summer, covering almost exactly the month of June, is the wild Rock Columbine (*Aquilegia*). How graceful and rare it looks in its rocky crevice! Air-hung like a tropic orchid, pendent on its curved stem, down-rushing, its five horns of honey cast in one piece and tossed carelessly out of the blue concave, nature's moulding foundry, some time in the myriads of years ago, it is a lovely flower to see, but too fragile (is it not?) for a national symbol. Yet its mere symbolism of names peculiarly fits it for that: columbine, from *columba*, a dove, reminds one incidentally of Columbus, while aquilegia — perhaps from *aqua* and *legere*, to draw water, but in popular belief from *aquila*, an eagle — reminds us of our national bird. The leaves of the plant are *e pluribus unum*, and the spurs in some species look like little liberty caps. The spurs of Canadensis, it is true, look something like the eager, outstretched neck of a dove or an eagle, but, alas! to tell the bitter truth, much more like the long neck of a wild goose or swan, while the flaring petals far back form the spreading wings.

The columbine in respect of these flaring red petals reminds me of the *Lobelia cardinalis* with its sumptuous depth of red (the despair, this, of a word-painter) and its ashen tints. I call the cardinalis the Phœnix Flower, — rising from the ashes of its nest. The tall stems of the columbine and the phœnix flower should be picked close to the ground, and displayed, only two or three at a time, in a slender vase. To all flower butchers, makers of vast cabbage bouquets, skinners of the dells and meadows, that exquisite and familiar sentiment of Landor in the Fæsulan Idyl (which I have in part quoted before,— "for 'tis and ever was my wish and way to let all flowers live freely," etc.) should be commended. Children might be taught that it gives a more elegant appearance to gather three or four flowers with a spray or two of foliage than it does to strip the shrubs and meadows bare.

Next to roses I don't know but the lustrous satin texture of the poppies yields most gratification to our sense for color. I tried them here in my hill-croft with great success; but they failed to seed themselves, as it was told me they would do. The flowers are all silk and dazzling flame. As Ruskin says, the poppy is the absolute stainless type of a flower, — *all* flower, *all* color, and robed in the purple of the Cæsars. Unpack a full-grown bud, and you find the flower there, to be sure, but the satin crumpled into wrinkles, folded up like a bee-nymph in its waxen cell; and crumpled the flowers seem to

remain to the end of their life. You might fancy them Queen Mab's silk dresses unpacked from little winter trunks. In the crimson Oriental poppy, with its great hibiscus-like blooms, there is a strong perfume of opium, and a kind of hauteur, as of some splendid Phryne, that seems to say, "Admire, but beware!"

It must be a pretty sight in the arctic regions to see the ground covered with immense sheets of the golden poppy of that region. One would think that its fragility and intensity of color make it appropriate to the warmer climes only.

One of Homer's finest similes is that of the poppy in the lines on the death of Gorgythion. Old Chapman's version of these lines surpasses the Greek in everything except the sonorous roll of vowel sounds, in which no language has ever equalled that: —

"And as a crimson poppy-flower, surcharged with his seed,
And vernal humors falling thick, declines his heavy brow,
So, a-oneside, his helmet's weight his fainting head did bow."

To substantiate the statement that this surpasses the Greek in beauty, the lines are here given in the original, followed by a translation as literally word for word as I can make it: —

Μήκων δ' ὡς ἑτέρωσε κάρη βάλεν, ἤτ' ἐνὶ κήπῳ,
Καρπῷ βριθομένη νοτίῃσί τε εἰαρινῇσιν.
Ὣς ἑτέρωσ' ἤμυσε κάρη πήληκι βαρυνθέν.

"And as a poppy lets fall to one side its head when in the garden it is weighed down with fruit and the rains of spring, so to one side he bowed his head heavy with its helm."

Virgil, in the Æneid, imitates this simile, and adds touches of his own, — color, for instance;

and his metaphor of the tired neck, how true to the fact of the slender hairy stem bent to the ground during rain! He is speaking of Euryalus, who lies on the ground dying, —

> "Purpureus veluti cum flos, succisus aratro,
> Languescit moriens; lassove papavera collo
> Demisêre caput, pluvia cum forte gravantur."

"As when a purple flower, cut from under by the plough, withers, dying; or as when poppies droop the head with tired neck when they are heavily burdened with rain."

Notwithstanding a few noble passages like this in the Æneid (I have read it all in the Latin, and speak advisedly), one is obliged to confess, when reading Virgil, and especially the minor poets of antiquity, that the poesy of Greece and Rome is vastly surpassed by modern works. As Fielding says, "The ancients have been considered as a rich common where every person who hath the smallest tenement in Parnassus hath a free right to fatten his muse." In other words, there has been a kind of exosmose going on through the ages, until now the sweet of ancient literature has all been filtered into our own. Their lion's marrow has long ago been extracted, and their quintessential wine drained to the lees. Hence our disappointment when we drink at these time-worn fonts. I came late to Virgil's Georgics and Eclogues, but had been for years anticipating a great treat. I was bitterly disappointed, as I have been also in most of the Elizabethan dramatists. They are nearly all trash and smut except Shakspere and Jonson. There are not more than eight or nine lines in the whole of the Eclogues and Georgics worth

memorizing. The only passage at all equal to thousands in Tennyson and our other poets, not to mention German poesy, is this, — and it is only a pretty, quiet genre picture: —

"Fortunate senex, hic inter flumina nota,
Et fontes sacros, frigus captabis opacum.
Hinc tibi, quæ semper vicino ab limite sæpes,
Hyblæis apibus florem depasta salicti,
Sæpe levi somnum suadebit inire susurro.
Hinc alta sub rupe canet frondator ad auras,
Nec tamen interea raucæ, tua cura, palumbes,
Nec gemere aëria cessabit turtur ab ulmo."

"O fortunate old man! here amongst well-known rivers and sacred springs you shall enjoy the cool shade. On one side the hedge that bounds your farm, where the Hyblæan bees are always feeding on the flowers of the willows, shall often invite you to sleep, with a gentle murmur. On another side the pruner under the high rock shall sing to the breezes. Nor in the mean time shall the hoarse wood-pigeons you delight, nor shall the turtle-dove cease to moan from the lofty elm."

It is astonishing to find how eviscerated and dessicated by the lapse of time, how thin and childish, these Georgics and Eclogues are. Their early reputation has outlasted their merits. They are more like a farmer's almanac of a higher grade than anything else. Their wealth of mythological allusion gave them a poetical interest for the ancients which they can never have for us. The scientific value, too, of Virgil's description of bees and bee-keeping is *nil*. He swallows, for example, the belief that new stocks of bees could be generated from the decaying putrescence of the carcass of an ox, and thinks bees carry gravel stones for ballast! His work is full of similar foolish superstitions.

Of Ovid, too, there are only, say, a dozen lines

one cares to quote or remember. What is true of him is true of almost the whole body of Greek and Latin poetry, except Homer, Horace, Aristophanes, Æschylus and Sophocles, and a few fragments of Sappho and Theocritus, and a few lines here and there of Martial and Propertius, — say four or five volumes that have drifted down the dark, indifferent stream of time with all their pristine perfume and beauty.

But the best Greek and Latin prose writers are immensely entertaining still, — Cicero, Tacitus, Suetonius, Plutarch, Herodotus, Lucian, Apuleius (and Plato and Aristotle to specialists).

> "Now turn againe my teme, thou jolly swayne,
> Backe to the furrow which I lately left."

I am going to vault deftly back again to my theme of summer flowers *via* Apuleius and his entertaining classic (cribbed from Lucian), "The Golden Ass," — a book, though, blemished, as are the stories of Boccaccio and Bandello, by frank obscenity or voluptuous and sensual descriptions. Lucian tells how a young man, by anointing himself with some salve slyly pilfered from an enchantress, was metamorphosed into a little donkey, and after many tribulations was changed back into a man by eating rose-leaves. Such power had a rose to turn a little donkey into a young man. But is not the converse true? Does not a red rose on the breast of a fair girl often turn a young man into a little donkey?

Yet we admire the joyous *abandon* of that Persian who, when the time of roses came,

struck work, dressed in rose-colored garments, and gave himself up to the enjoyment of this queen of flowers. And was it not another Persian (Saadi) who plucked in Paradise a lapful of roses to bring back to earth, but was so intoxicated with their perfume that he let them fall from his robe, and so lost them?

Herodotus writes that King Midas had a garden at the foot of Mt. Bermion, in Asia Minor, in which grew spontaneously roses of sixty petals and of extraordinary fragrance. Was this our hundred-leaved rose or an ancestor of it? It was in this same garden that sleepy old Silenus was wont to come and doze and nod and inhale the perfume of the roses. They caught him by mingling drugged wine in the fountain from which he drank, and then forced him to prophesy. So runs the story wrapped in its languorous Oriental atmosphere.

Renan, in his brilliant little philosophical drama, "Caliban," represents Ariel as exhaling at death into the pure elements. He is going, he says, in taking leave of Prospero, to mingle with all that is pure and sweet, — the azure of the wave, the blue of the glacier, the purity of a maiden's heart, and the perfume of flowers. He will bloom with the rose, lurk in the greening myrtle, in the spicy fragrance of the carnation, and in the delicate pallor of the olive leaf. This is as pretty a conceit as that which gives us the origin of the fragrance of the rose. The story runs that one day, at a feast in Olympus, Eros, while executing a light and gay dance, overthrew with a stroke of his wing a cup of

ambrosial nectar, which, spilling over a rose, gave it its delicious odor. Now, a rose is always a rose, to be sure; but, as there are seventeen different varieties of rose scents, — moss, brier, musk, tea, etc., — suppose we improve on this story of origins by saying that these different tones and semitones of odor were caught from the sweet breaths of nymphs and hamadryads in the cool forests of earth in the long ago?

What I call the first rose season — that of greenhouse blooms — comes in the end of March and in April. These roses of the glass house far surpass in flawless leaf and spiralled petal the hardier outdoor roses of two months later, when numerous other admirers of the queen pay court to her in the shape of bugs and beetles that sadly fret the leaves and buds. Glass greenhouses were thought until recently to be one of the luxuries of modern days. But the Romans had both greenhouses and hot-beds. The execrable Domitian (Suetonius has written his life with those of nine other imperial Cæsars who are the supreme scoundrels of the human race) had early cucumbers, raised in baskets of manure covered with plates of mica in lieu of glass, and taken indoors over night. So the gardeners of that monster the Emperor Tiberius had raised beds made in frames set upon wheels, by means of which the cucumbers were moved and exposed to the full heat of the sun; while in winter they were withdrawn and placed under frames like our hot-beds, only glazed with sheets of what is popularly called ising-

glass,— *i. e.*, mica, or "mirror-stone," *lapis specularis* (Pliny, Nat. Hist. xix. 23: 5). And Martial, speaking of the garden at the country seat of his friend Entellus, says (viii. 68) that, in order that the malicious frost might not nip the purple clusters of the grape, he had them protected under a roof of *lapis specularis*, "carefully covered, though not concealed. Thus does female beauty shine through silken folds, thus are pebbles visible in the pellucid waters."

Martial also compliments Domitian on his winter roses, "Pæstan rose-beds" (vi. 80). These, however, were perhaps not grown under glass; for, as Virgil says (Georgics, iv. 119), the roses of Pæstum bloomed twice a year, like some of our hardy teas. But Becker, in his "Gallus," rightly finds elsewhere in Martial (*i. e.*, xvii. 127) allusion to forced roses in the expression "festinatas coronas." In 1874 a room of the Villa of Mecænas was uncovered which Mohr has proved was a Roman greenhouse. The tiers of stages on which the flower-pots were placed surrounded the walls, in which were niches beautifully painted as garden scenes with flowers and fountains, as if each recess were a window looking out into the open. There were no windows, but light was admitted from the vault above through a large lunette covered with crystal plates.[1]

Our modern glazed greenhouses are only a

[1] As shown in the *Bulletino della Commissione Archæo. Municipale* (Rome, 1874), which prints excellent engravings, and says, "Molti frammenti di grosse lastre [sheets] di cristallo antico sono stati rinvenuti fra le macerie [rubbish] e le terre cavate fuori dall' interno del luogo."

hundred or two hundred years old, probably coming in with the introduction of steam into general use. Governor Oliver Ames's orchid houses — a bit of the tropics transplanted to bleak New England — would have made the Emperor Augustus green with envy, if that meeching individual had cared anything for nature. But let the Romans pass, as Dekker would say. What need has sunny Italy, the land of roses, of anything grown under glass? Italy herself is a beautiful conservatory under a high sun-filtered roof of lapis lazuli, where amid dark leaves the gold oranges glow and myrtle blooms.— But the greenhouse rose, though perfect in form, is not the typical rose: it lacks the right fragrance. You have a feeling akin to affection for that delicate potted tea-rose you have bought, as it swings to and fro and nestles against your face; but the Peris, who derived their nourishment solely from the nectar of roses and honeysuckles, would have detected at once the difference between this exotic and the hardy richness of odor of an outdoor Jacqueminot or Gabriel Luizet.

One can't analyze the pleasure given by roses: it can only be recalled to the memory. Can you describe in words the faint perfume of the sweet-brier after rain, or the rustic chasing of the fragile moss bud, or distinguish the fragrance of the damask or musk rose from that of the blood-red Jacqueminot or the ashen-rose La France? How convey an impression of the superb morbidezza of texture of the Baroness Rothschild and its Alpine glow of color, or of

the dark crimson of the Rosière (named from her who in France was the queen of the rose-bud garden of girls), or the honeyed fragrance of the dark-rich, many-leaved, and long-lasting Carrière, or give a form-impression of the budding breasts of the whorled spirals of Catherine Mermet or the Gloire di Dijon?

I have heard an eminent rose-grower state that La France is absolutely the best rose in the world, and I agree with him. It is hardy, blooming steadily until frost, and after, with a marvellous profusion of blooms. I have had them from bushes on the lawn late in November. In this trait of perpetual blooming it differs from all the other hybrids, or hardy roses.

It is worth a journey to see the acres of Wichuraina roses annually in bloom by the Valley Gates and elsewhere in Franklin Park, or on the banks of Riverway and Fenway parks, in Boston. To stand on the lee side of that great artificial hill, in Franklin Park, shoaled with myriads of these little white blooms, and drink in wafts of the delicious perfume, is a delight so keen that an hour slips by before you can tear yourself away. Thousands of bees, wild with excitement,— humble, bumble, honey, and Liliputian,— are rolling in the enormous wealth of pollen spread out for their use. These cunning chaps know by a touch whether a bloom has been rifled or not. If it still has some nectar left, they all take the same course to get it with the least expenditure of time; namely, by walking right round the stamens

until they have encircled the flower, when off they dart with zip and zing, the old bumbles ballooned out as to their thighs with cuisses of pollen,— that look a bit like burgomasters' breeches, too.

A wonderful tenacity and opulence of life in these roses from the Flowery Empire. In four years after their importation they had stormed over the hill on which they were planted, captured its other inhabitants, and either strangled them or so walled them up with meshing and interpleachment of their long succulent liana fingers that only the tiptops of the rhododendrons and double-flowered blackberries, for instance, were visible. One would say that this bush was to be *the* rose of American wild roses. Like its fellow emigrant, the Japanese *Rosa rugosa*, its rich gloss of leafage ranks it above our sweet-brier. Place the two side by side, as I have seen them, and you will find our brier to be a shockingly shabby, meagre, brown, and lack-lustre affair in comparison. The latter has one point, though, and a weighty one, in its favor: its leaf and wood have perfume; those of the other have none, although perhaps to most persons its abundance of sweet-scented blooms would more than make up for this. But even the Wichuraina has its enemies: it is often badly eaten by "rust," and somewhat injured by unfavorable winters.

By the middle of May the old lanes are swarming with birds, all engaged in the task of destroying noxious worms. In attempting to exterminate the gypsy-moth caterpillars that had

got into the trees, I found I had a very good helper in the rain crow, or Cuckoo, with its solemn, dazed-looking eyes and furtive ways. It is an erratic, ghostly, ill-balanced bird, yet the farmer's best friend. The cuckoo arrives about the middle of May with the first hot wave, floating up with the south wind in his favor; and suddenly from some leafy covert you hear this: *kuk-kuk, kuk-kuk, kuk-kuk, kuk-kuk; cluck-cluck-cluck, cluck-cluck-cluck; cow, cow, cow, cow, cow, cow!* The bird also has a plaintive cooing that is quite musical, and reminds me of the mourning dove whose note — the most pensive-sweet sound in the bird world — I used often to hear out West, but have only heard once near Boston. I call the yellow-billed cuckoo, with his drab and butternut-colored coat, the Quaker Bird. My gypsy-moth cuckoo was so excited over his feast of caterpillars that he allowed me to approach within a few feet of him while he bent his head knowingly down, and pulled the grisly worms out from under the burlap neckties around the trees. A neighbor who knew Mr. Trouvelot tells me that, when he introduced the gypsy moth into the neighborhood of Boston for the purposes of silk culture, the cuckoos showed such a fondness for his plump, juicy Ocnerias that he had to cover them with netting and shoot the marauders with guns. How would it do for the State of Massachusetts, instead of supporting an army of men to fight gypsy moths, to have a cuckoo-breeding aviary? It costs immensely less to breed a cuckoo than it does to support a man;

and the cuckoo, black-billed or yellow-billed, is worth a good deal more for the business of extermination than the man.

Who invented the lawn mower? Cyclopædias and dictionaries know nothing about it. The Robin owes the unknown inventor a series of his best evening songs, for the enormous increase of smooth-shaven lawns makes an excellent feeding-ground for the *Merula migratoria* The tomato colored bird is not at all times a favorite of mine by any means; yet his evening song atones for his loud impudent screams during the day, for his waking you up at three or four o'clock in the morning, and for the torturing monotony of his love-song in breeding time. One of a pair that built within earshot of the house yelled steadily for a month or so "*we* tole you, *we* tole you, *we* tole you," till we nearly went mad. The same one came back the next year, but was only heard for a week or so at a distance. The robin is a tolerable mimic. I heard them this spring mock the yellow-throated vireo, the whip-poorwill, and the chewink. When I see a robin on the lawn, straddling over an unwilling angle-worm that he is pulling from the ground, I am reminded of an amusing remark of the late Rev. Dr. Hedge, of Harvard University, who was opposed to the actual eating of the bread and drinking of the wine in "the Lord's Supper"; for, said he, in his deliberate manner, "the act of deglutition is not an edifying sanctity."

It is a pretty difficult thing at first to detect the *running*, one foot before the other, of the

robin and his fellow-thrushes. But run they actually do, with an occasional hop, too, as is the way also of grackles, black buntings, and crows.

One summer a pair of robins built in a small tree just six feet from my window in Cambridge, Mass., the nest being two feet lower than the window-sill, thus affording the best possible view of their proceedings. (Curiously enough, as I write these lines, August, '96, in Belmont, the same thing, a second or July brood, too, is being repeated after an interval of sixteen years; for I can look up from my paper to watch a robin building in a little pear-tree close by the window.) Any half-dislike I might have felt for the robin has been softened by these little housekeeping scenes. The building of the nest, the rearing of the brood, with the maternal devotion, were irresistible arguments in favor of the unconscious plaintiffs. Here is the record of the Cambridge brood: —

July 21. — Yesterday and the day before she built up the framework of coarse straws. To-day she has lined it with mud, and covered the mud with a lining of soft grass. It now looks quite elegant. Hurrah! I wish I were a bird myself to try it. It must be a rare pleasure to build your own house, — not in the orthodox carpenter fashion, but out of your own head, with materials selected by yourself out of the woods.

I envied Burroughs this winter as he told us with enthusiasm how he had got his carload of slabs up in the Catskills, and built, largely with

his own hands, a goodly-sized rustic growlery on picturesque wild land, laying himself the stone for the chimney and fireplace, lining the interior with birch saplings, etc. In building your own house, you are the shellfish that constructs its own shell and then lines it with nacre to suit itself. Most houses are not individual: at least, the outside is what some one else thinks our shell ought to be, and we are dictated to about its lining. Even the poor caddis larve of the brook has the privilege of constructing its own rustic house out of the rubble and bits of bark it can find, and the result is something pleasing.

What is it that tickles us so, when we see an old horse-car dismounted and resting amid the grass and shade of private grounds for the use of tennis-players; or a steam railway-car turned into a residence for Michael beside the track: or an old canal-boat used for the same purpose? Partly the novelty of finding a familiar object adapted to new purposes, but chiefly the seeing how a man has outwitted the wooden-headed carpenters, and, Diogenes-like, got himself a unique dwelling,— found one ready made, and walked off with it, like the hermit crab with his old periwinkle shell, or a wren nesting in an old boot or the sleeve of a coat. We have the pleasure in it that a boy does in his wigwam: he built it himself, that's the secret of his joy in it; and we sympathetically partake of the pleasure of the Irishman, and his sense of power in his domicile, so cheaply acquired. I enjoyed that study I built, largely with my own hands,

years ago out in Ohio far more than I should have done otherwise.

I occasionally pass by an old Peggoty dwelling, the abode of a small ship-and-boat repairer, that pleases me hugely. It consists of the upper works of a steamboat, located on the side of a slope, so as to afford room for rude workshops below. With this exception the house is all on one floor: there is a fine roof-parlor made by the ship's railing which runs around the whole. All sorts of quaint, cosey devices have been adopted to make the dwelling comfortable. Grape-vines trail over its side; the porch at the front door is overrun by a Malaga grape-vine, and a kind of narrow look-off platform, two feet wide, runs along the front, battlemented as to its margin with a long whitewashed box, crimson with phlox. From auger-holes in the front of the box hang gaudy nasturtiums, masking the wood almost entirely and edging with their red and yellow the crimson of the phlox. Below, in a little sunken garden of blackest earth, grow asters, roses, sweet-peas, mignonette, heliotrope, and gladiolus. An old dory is entirely filled with petunias, that spill over its sides and drift their pungent essence, or life-spirit, out upon the air. Enchanted, you linger long and dream of the shy, demure little dame, sweet-gowned and golden-haired, whom you are sure must be the fosterer of these little dumb ministers, — the fairy godmother of the garden, to dress it and to keep it. Alas for poor humanity! You should have but glanced and fled; for out crawls a frowzy woman, in a sunbonnet, with

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a panful of *soot*, with which she proceeds to sprinkle every plant in the yard. She remarks that she was "cleanin'" out the stove and thought she would put the "sut" on the plants, for the green worms "was gettin' on 'em all."

But the robin's nest. The modus operandi of Mrs. Robin is this: she first places a mouthful of straws in the place selected for the nest, then another and another. After a while she tucks up her feet, gets down into the straw, and works her feet behind her as backward-operating hands to fix the straws in place and give them shape. By turning around frequently, she thus fixes and interweaves the material with her claws, and smooths and rounds it with her breast. The mud is treated in exactly the same way.

August 6.— During my absence four green eggs have been laid and brooded upon. The young ones are now hatching out. The male bird brings worms and insects which he puts into the bill of his spouse, and she in turn puts the same into the ludicrously big mouths of the young ones. She herself occasionally flies down near at hand and gets a worm for them.

August 12.— To-day the male bird decided, after long pondering, to try the feat of sitting on the nest. It was laughable to see how awkwardly he did it. He nearly trampled the young ones to death, and was soon driven off, quite crestfallen, by the indignant mother.

August 19.— The last of the young robins left the nest to-day.

The pear-tree robin's nest of '96 was built en-

tirely by the female, and she alone brooded the eggs. A moment ago, while writing, I saw her fly off, when the male bird at once flew up to take a look at the egg treasures. He stood by the nest for three minutes, until the female returned, occasionally giving a little peck at the nest. When she returned, he at once decamped. Had he been standing guard? I saw him do the same thing on another day. He occasionally comes to visit his spouse, either to feed her or to stand close by the nest and look at her. In a flock of birds, or a colony building nests together, as swallows or the social grosbeaks of Africa, how do the different pairs recognize each other? Probably by voice and gesture more than anything else. The pear-tree robin took just five hours in giving birth to her first egg. She took to her bed at eight A. M., and at one o'clock, without any noise of cackling, slipped awa', leaving a green egg behind, as I ascertained by inspection. She had a queer habit of shrieking or squeaking, both while on the nest and during the entire season. It was a sort of Mrs. Gummidge wail, I made up my mind. Sometimes it was quite loud when she was brooding and I was standing close by, under her eye. It seemed a cry to her mate in her loneliness, part of the "sweet pain of mothers." In the case of a bird so active as the thrushes all are, it must be harrowing to sit still day and night for a fortnight: it made me sympathetically tired to look at her sitting there, with her bill wide open from the heat. When the sun was too fierce (she had little

shade), she would sit partly off the nest to cool her breast.

She began brooding when the second egg was laid; and thirteen days after the first egg was hatched. It was most serious business to feed those young, and themselves, too. Both birds toiled at it from early dawn to late dusk. Sometimes the female would give one of her whistles of dismay as she contemplated that group of always-open yellow gullets. I suppose she herself was nearly starved.

When the young were about ready to fly and had begun to spill out of the over-full nest,—the old story,—and lie helpless on the ground, I tried an experiment with them. A cage was constructed out of a small salt box, 6×14 inches, wooden slats being nailed across the sides and top. The young squabs were then transferred to this new home, and hung up in the pear-tree just below the nest, amid heart-rending cries from both parents. If I had not felt that I was probably saving the young from cats, I should have repented on seeing the consternation of the old birds. I chiefly regretted their loss of trust in me. However, this was not of long duration. They "caught on" pretty quick (or the female, at least, did), and made scarcely any fuss the third time I approached the new-fangled aërial robin-coop for the purpose of removing a couple of slats from the top, so that the old birds might enter the box to clean it (an indispensable requisite). This I was pleased to see they did. The opening at the top was also designed to give the

young opportunity to escape as they grew large enough. When they got used to it, the parents seemed well pleased with the pen in which their babies were confined; for it kept them safe from premature straying and out-tumbling. But for some ten minutes, at first, both birds continued to scream and dash past, and almost onto, the cage, which they evidently thought was a kind of dragon that had swallowed their darlings. But very soon the female had accepted the situation (she was always the tamer of the two, would allow me to talk to her and almost stroke her when on the nest), and was feeding the young through the slats; *i. e.*, when the male did not startle her away by one of his dashes of bravado at the box. The poor fellow had worked himself up into a fever of excitement, his mouth was open with heat, and he continued to think it incumbent upon him as the defender of the family to dash at that box, survey it with up-cocked eye from the grass below, and in every way express his indignation at a contraption which had interfered with his domestic affairs in so unheard of a way. A kingbird, another male robin, and a pair of red-eyed vireos flew close around the robin-coop, and tried to see if they could assist in any way. In about an hour the big-crested, ruddy-breasted papa had taken his cue from mamma; and from that time they worked quietly on in unison, feeding the prisoners through the bars, carefully putting into each saffron cavern of the row emergent from the box its due proportion in rotation.

Eight hours after the box was put up young freshman Robbie No. 2 flew up to the outside of the box, where he perched the rest of the day, trying his wings, like a man waking up after a nap and stretching. (How long had the robin's nap been between his incarnations?) He got plenty to eat, usually intercepting the old ones as they were on the point of hopping down into the box. When too full for more, he would get a gentle pecking on the back of his head to make him open his bill, which perforce he did. It was his brother No. 1, brought up by hand by a lady friend, who, not content with swallowing his forty feet of angle worms,— or its equivalent in egg and grasshoppers and meal worms, and putting the kind lady in "such a canaries," — tried also to swallow the spoon with which he was being given water. Robbie No. 2 launched forth about dusk into the untried ocean, the air, amid great excitement on the part of the old birds. Thereafter the male bird had to care for the remaining squabs, the female devoting her attention entirely to her second born.

The robin brought up by hand was fetched back after a week, the owners not being able to get, by proxy or personal labor, enough worms, grasshoppers, ants, etc., to satisfy its cravings. It was handsome, and very tame, a loud chirper, and soon attracted the attention of its mother, who thought at first it must of course be one of her familiar brood. But a funny sight was soon seen: the robin kept loudly chirping, and the mother, thrown into great nervousness, kept

HUMMING-BIRD'S NEST WITH YOUNG.

flying up with food in her bill, and closely inspecting him. He, however, had forgotten his parent, and, instead of opening his bill and crying for food, kept an obstinate silence when she came close to him. This astonished the mother, who would fly away with the food, but be constantly drawn back by the vociferous cries of her eldest son. Presently he left his perch, and by nightfall I noticed that he and his mother had a complete understanding: she had become the slave of her child with the peculiar note, and was feeding him "rum cherries" very assiduously.

What a pity that only one — the Ruby Throat — out of the four or five hundred species of humming-birds of Tropical America come north to visit us! (In the East, I mean. West of the Mississippi there are fifteen species, ranging as far north as Alaska.) Yet we are profoundly grateful for that one bit of animate lightning with sightless wings, although we can't imagine why the rest of this great family of Peris haven't taken it into their heads to come as well as he. And I am profoundly grateful also to an ornithological friend for showing me that humming-bird on her nest, — a delicate lichened cup on the bough of an old apple-tree, the daintiest thing the bird world can show. When the Duke of Argyll was in the United States a few years ago, he saw the Ruby Throat but twice; but he was so delighted that he said that alone paid him for coming over. He must envy those of us who have

them about our porches every summer, sipping the blossoms of the red-flowering bean and the honeysuckle. There are no humming-birds in Europe; but, as they will live a few weeks in confinement, why would it not be possible to capture a nest and its young, with the mother, if possible, and try taking them across the ocean to liberate in Europe? I see no reason why they might not live through a pleasant six days' voyage in summer. It is surely worth while to try it. They could be fed on sugar-water and a supply of live insects (spiders, etc.) prepared beforehand. The question is, Would they know how to find their way south when the winter came?

It is fun to see how they will distance a bumble-bee, when attacked. Bumble stands no show at all in wing speed. They may run from a bumble-bee to get rid of his sting, but they are astonishingly pugnacious and brave in attacking even quite large birds. Humming-birds actually perch a great deal and are only a short part of the time on the wing. This makes sad work of the popular idea. Was it Howells or Gosse who wrote a poem on the rare phenomenon (as it was thought) of seeing Ruby Throat alighted? — in this case on a clothes-line.

Did you ever notice how the humming-bird is apparently swallowed up by the air as he departs? One's wonder is not less at the twentieth repetition of this bit of enchantment than at the first sight of it. With the swiftness of lightning the humming ceases, and the bird seems to melt into the air, snuffed out of sight

like the flame of a candle blown from its wick.

A neighbor and his wife, who cultivate flowers, assured me they had often seen a baby humming-bird with the old one. The man captured it, and then let it go. He said it was about as big as a bumble-bee! Of course, it was one of the Sesiæ, the humming-bird moths, — probably the Sphinx or Hawk moth. Some of these are day-fliers as well as crepuscular, and have the power of producing a humming sound. The brilliant humming-bird moth, called by the people sometimes the "lady-bird," is a little larger than the bumble-bee, of an olive-green color (like the Ruby) on the back, and a broad band of brown underneath. The breast is white, and lower parts brown, wings transparent, and tail fan-shaped. When not on the wing, they look like a round brush made of bright feathers. They are specially fond of petunias and the sweet phlox, which they visit in July and August. When poised upon rapidly vibrating wings above a blossom, they look curiously like a humming-bird. Indeed, the unscientific smile incredulously, when you assure them they are not the *Trochilus colubris*, but moths.

The crepuscular sphinxes are not so brilliantly colored, of course, as the day-fliers. In the dusk of an August evening, while you are sitting and listening to the electric clicking of the katydids (a combination of that and a buzz-saw) in the woodbines and honeysuckle, suddenly out of the darkness appears the sphinx moth, and poises himself on noiseless wings, with leisurely

elegance, over the scented tubes of the white honeysuckle, from which, although it is a second table at which the bees and humming-birds have been feasting all day, he seems to draw abundant sustenance of nectared sweets. The noiselessness of wing motion of the sphinx moths, which seem quite fearless, is startling: it seems as though their wings must be beating in a vacuum. The sphinx is named from a habit it has of getting up on its posterior end, and remaining motionless for hours in a position which gives it some resemblance to a sphinx. A favorite allusion of Jean Paul is to the night moth. The earth itself he likens to a great moth, which flies around the sun, and finally sinks into it and is consumed. As for men, they are "the fluttering particles of dust on the moth": they, too, have their little day, and cease to be.

V.

HIGH NOON OF THE YEAR.

JULY and August are somnolent months. Time and space, life and death, seem quite as they should be. The struggle of animal life for existence is robbed of its terrors. Anarchy and proletarianism, and the trusts (ironically so called) of Shylock & Co., don't seem half so menacing to society. The roadsides are lined with sheets of blue succory and bugloss, the crimson loosestrife and the goldenrod and tansy; and crates, cars, and wharves are cumbered with delicious watermelons with their foison of nectar and crimson flesh, lolling in heaps everywhere, like dropsical old Dutch burgomasters with aching sides, too fat to move. In the *dolce far niente* August evenings, with the moon throwing quiet arabesques of shade around the lawn, of course you are not foolish enough to read, nor do you even feel like thinking very deeply. You are very much in the mood of the schoolmaster and scholars of that sleepy little kindergarten that had a bed in the room for the sleepy pupil, and of which the master discourses as follows: —

"And sometimes it will happen on a warm and pleasant day,
When the little birds upon the trees go tooral-looral-lay,
When wide-awake and studious it's difficult to keep,
One by one they'll get a nodding till the whole class is asleep!

"Then, before they're all in dreamland and their funny snores begin,
I close the shutters softly, so the sunlight can't come in;
After which I put the school-books in their order on the shelf,
And, with nothing else to do, I take a little nap myself."

Drifting on through the slumbrous days, you half imagine that men and animals all have been eating of that somniferous grass reported from New Mexico, the properties of which are such that cattle and sheep, after eating of it for half an hour or so, lie down and fall asleep, then wake up and go to feeding again: the horses of the traveller, having eaten of this papaverous grass, go to sleep while on the way and are with difficulty aroused, and pasturing horses sleep standing in the field. So a newspaper says, and the Daily Sewer, the glorious Aristides of morals, the censor and the tribune of the people in one, cannot possibly tell a lie.

It would seem as if, with seven million pores in our skins and twenty-eight miles of perspiratory tubing attached to it, we ought to be able to keep cool even in August. But this is a hot and an arid country. Phœnix, Ariz., is one of the hottest towns in the world inhabited by white men, — an oasis reclaimed from the desert by canals of water, where the temperature in June is from 112° to 118° in the shade, where people sleep in hammocks or cots on the verandas among palm, pepper, oleander, and fig trees, drink water filtered from porous ojo jars, cover their streets with wooden roofs, and hang the sides of the same with canvas curtains, and yet even then, and maugre the sprinkled pavements

and the running water in the gutters, wilt in the heat, and men are frequently brought in from the surrounding desert crazed by the flaming-hot sunshine.

This of course is exceptional. But there are the droughts of the Middle and Western Middle States. I have lived through a good many of those droughts, and never want to see any more of them. "Baked heads," with wet cloths on them, in the day-time, and wet sheets hung up in the chamber at night, while you toss restless and feverish and wakeful, *shivering*[1] with the heat; the roads ankle-deep with white dust, the hot grass scorched to a brown and red or shrivelled away, not a spear of green in it; the sun like a ball of copper in the sky; the green leaves withered and blowing away in the hot gusts; creeks dry, their beds covered with decaying fish; wells polluted or empty; cornfields beds of dust, with stunted yellow stalks bending over them; raspberry bushes loaded with crops of fruit hard as shot and as small; fires starting everywhere in the woods, — such are the features of a Western drought. And we had one something like it right here in the East (Eastern New York) in '95.

But on the Atlantic coast all this is mercifully tempered by the sea. After the heat of the day a mighty suspiration of tired Nature draws in the cool air from the ocean. It takes about two hours after sunset for this regular evening breeze to reach us, fifteen miles in from the coast, and seven from salt water in the harbor

[1] My friend Joseph E. Chamberlin's word for the phenomenon.

of Boston. But a cool, in-driving fog makes much quicker time than that. One June evening, I remember, the black flies were biting the face as in August, the heat was like that of July, and vegetation was in a high-jinks state of excitement, when suddenly I saw a gray fog drifting in from the sea, wiping out as with a sponge the spires and gilded dome; and in ten minutes it had reached the place where I stood, having travelled at the rate of a mile in a little over a minute.

The approach of a September thunder-shower in a hayfield, as you are gathering up the last load, — were you ever of it, not as an amateur in city clothes, but as a boy to the manner born, in your shirt-sleeves, with tattered old panama on your head, and mighty for pulls at the corncob-stoppered water jug in the shade that guggles out "Good, good, good!" as you drink. How the pitchfork handles strain and bend with their loads, and how the perspiration trickles from the brow! The old gentleman-farmer, with white vest and stout gold chain, is almost buried on the load by the forkfuls tumbled in on him. The big, wild-eyed steers clash nigh and off horns fearfully together as they stride lumberingly along, goaded by the driver. "Ha! here she comes!" cry the boys, as the great ballooning black clouds far up bring on a semi-twilight and an advance gust seizes a wisp of hay, and, tearing it into fragments, bears them on and aloft out of sight. But the old hands know that they have yet a little time, and that that

HAYING TIME.

low-flying green rack on the horizon, from which comes a distant bellowing, contains the rain. And in good time, as the steers trot up the old meadow lane, here come the first delicious drops, driving a cool gust before them. Fast, faster, the patter increasing to a roar as the wagon drives into the barn, while the boys hold their old panamas under the eaves and drink the cool stream that gushes from the spout of their improvised pitchers.

July and August are the months of the quail. Bob White is a Westerner, *par excellence*. The books call it "common" about Boston, as they do the meadow lark. But in our suburb there are only four or five meadows where larks are found, and only one or two pairs to a meadow. One pair raised a brood on the extreme outskirts of the town in '96. The young of this pair, in their fresh gold and black coats, were not nearly so shy as the old ones, who never liked to be within gunshot of a man, and yet kept foolishly crying out all day, "*Here, d'ye see?*" Some one says the meadow lark sings *et see de ah*. Some do so sing, but I hear most of them sing a clear-sweet plaintive *Here d'ye see-e*, or sometimes *Her-r-re, do you see-e-e*, rolling the *r*'s in a kind of tremolo.

In the days of August, when the hot locust "spins his Zendic rune," birds are moulting and mostly songless; and then insects form an attractive study, — all but one, the confounded blood-sucking mosquito, whose origin Erasmus

Darwin sings through his nose in the following quaint pennyrial-hymn style: —

> "So from deep lakes the dread Mosquito springs,
> Drinks the soft breeze and dries his tender wings,
> In twinkling squadrons cuts his airy way,
> Dips his red trunk in blood, and man his prey."

A member of his family being unable to be in the open air at all after dusk (living on the edge of a forest), a waggish suburbaner, who shall be nameless, has planned a machine which he calls "The Mosquito's Despair." He is going to have constructed of common wire-screen a "perambulator," like a gigantic bee-hive on wheels. It is to have a door, and be propelled by means of two simple handles attached to a light aluminum rib running around it, and having a cloth-netting fringe to sweep the ground. Under this screen the lady will walk about her lawn at leisure, open a little wicket to pick a rose or water flowers through a garden hose entering at the bottom of the perambulator. To use the lawn beehive will of course require some courage at first, and may cause the death of a few small boys from excessive laughter. But all innovations cause laughter. When first used by Jonas Hanway in London about a hundred years ago (1786, to be precise), umbrellas seemed just as ludicrous. Wordsworth thought them unmanly, and in one of his sonnets speaks mournfully of "the umbrella spread to weather-fend the Celtic herdsman's head" as an indication, among other things, that ancient manners were "withering to the root." The hackmen and sedan-chair

men were all down on umbrellas, and the people yelled "Frenchman!"—*i. e.*, in modern parlance, "dude." The sister of a London footman was compelled to quit his arm one day, we are told, owing to the storm of abuse excited by the umbrella he was carrying. I myself saw a modest, pretty girl, with her well-dressed beau (a lad), actually driven from the lake in the Public Garden of Boston, where thousands of children were skating, owing to the crowds of silent guyers who surrounded and followed her because they had discovered under her girl's jacket a boy's sweater (invisible except to the closest inspection), perhaps her brother's, which a kind mother had coaxed her to wear to keep her warm.

More attractive insects than the mosquitoes are the grasshoppers (or locusts) and the cicadas.[1] The latter are not nearly so common in New England as I used to see them in Ohio. One could imagine the hot midsummer noon to have itself found a voice in the annual or the thirteen-year or seventeen-year cicada, as he reels off his shrill music in some tree. In the pretty story of Daphnis and Chloe, in Heliodorus Longus, the "grasshopper" of the English translation should be *tettix*, or *cicada*. The story runs that, as the charming young Chloe lay sleeping one day, a cicada flying from a swallow fell into her bosom. "The swallow

[1] The "locusts" of the Bible were our grasshoppers. In America we have misapplied the word "locust" to the cicada. The so-called "seventeen" or "thirteen" year locust is a sap-sucking cicada, and is not related at all to the biting locusts, or grasshoppers.

was unable to take its prey, but hovered over Chloe's cheek, and touched it with its wings." She screamed, started, and then, seeing Daphnis, rubbed her eyes, and laughed. "The cicada chirped from her bosom, as if in gratitude for his deliverance. At the sound Chloe screamed again. At which Daphnis laughed, and, availing himself of the opportunity, put his hand into her bosom, and drew the happy chirper from its place, which did not cease its note even when in his hand. Chloe was pleased at seeing the innocent cause of her alarm, kissed it, and replaced it, still singing, in her bosom."

I confess to an interest in another class of insects,— the snare-weaving spiders, though I detest their cruelty. They are now known to be immensely useful to us in killing myriads of flies and noxious aphides. I once had the good fortune to see a spider — *Epeira vulgaris* — weave its round web. A lamp was held quite close to it for half an hour, but it was so intent on its work that it did not seem to notice the light. Spiders almost always weave their webs at night, so as not to attract the attention of their enemies. My Epeira, when discovered, had laid her spoke-lines, and was carrying around the wide-spaced, non-viscous, circular lines, the measure being the length of her own body with legs stretched each way to the utmost. After the spider had dropped her initial radius, or spoke (it should be said), she stretched the others by running along No. 1, and spinning another, holding it off with one claw so as not to interfere. When she reached

the outer circumferential line of her hexagon, she ran along it, still holding spoke No. 2, until she reached a certain distance, when she fastened it to the circumference. And so on. A spider's silken thread (it is true silk), as is familiarly known, is compound, being composed of many distinct strands (five in the case of Epeira), exuding in a viscous state from the spinnerets, and immediately hardening on being united into the silken thread. Having finished the first series, she turned squarely about, and began to fill in the finer and viscous circular lines, moving now in a direction the reverse of her former one, accurately spacing by means of the third pair of legs, moving on by means of the foremost and second pair, guiding the silk by the fourth or hindmost pair, and touching each radial spoke-thread with the spinneret as she passed to fasten the circular one to it with the viscous material that is secreted by special glands near the silk glands. The whole work was performed with surprising rapidity and elegance. My lamp attracted insects, of which some were caught in the new web when it was nearly finished. The spider could not resist the temptation to leave her exhausting work to kill and devour one for a luncheon, having first paralyzed it with her poisonous mandibles, doubtless blessing her good luck as she ate. She turned over on her back to kill the fly, holding on to the web by one claw.

Epeira occasionally tears down her old web by bits, putting in new threads as she goes along, chewing up the old one and dropping it

in pellets to the ground. It is known also that she bites off the first series of non-viscous spirals as she goes back toward the centre with the second series, and leaves the ragged ends of the first hanging to the cross, or radial, strands. I did not notice this, but am pleased to find that my observations, made twenty years ago, correspond exactly with the book descriptions as I read them to-day. McCook counted the viscid beads (or rather counted a piece, and then calculated the rest) in the snare of Epeira, and found they numbered one hundred and forty thousand.

When Epeira has finished her web, she finds herself at the centre of her stronghold, where she usually has a den. Some spin the den a little way off, in a nook, and carry a door-bell line to it, to apprise them by the pull when a victim is caught. Whereupon they rush out to the attack, and feel the threads at the central point to see which one the insect is on.

Every year three or four huge brownish-black tarantulas, or wolf spiders (Lycosa), construct their tubular dens on the lawn or in the lane. These are the creatures Topsell speaks of: "Others againe be meere wilde, liuing without the house abroade in the open ayre, which by reason of their rauenous gut, and greedy deuouring maw, haue purchased to themselues the name of *wolfes* and hunting Spyders." I have just been out to measure the diameter of the tube of one of these miners: it is three-fourths of an inch, extending down at a steep angle for some inches, then bending obtusely and again

descending, this time vertically. The mouths of two of the holes are smoothly lipped with a dead leaf or two, and arched partly over with dead grass and living white-clover leaves. (Your spider has a great weakness for your dead leaf, especially when curled over so as to form a little funnel in which she may house.) All are on a sunny, dry slope fronting south-east, just the locality these spiders like. The smoothened lip of the tube — a little glutinous silk web being used to make all compact — serves, I suppose, to make more easy and inviting the descent of insects that happen along that way, and say to themselves, "My, what a nice little retreat!" But *facilis descensus Averni, sed revocari* — there's the rub. It's easy to get into Hades, but how to get out? It being our duty to kill scores of rose-bugs, I took occasion to tie a thread to the hind leg of one, and let him down into the awful dragon's den. The black monster was lurking at the angle of the tube, just out of sight, and instantly pounced upon the bug. I pulled and she pulled; but, when the bunched lower four of her eight eyes began to glare greenly up out of the dark tube, she saw me, smelled mischief, and let go her hold. I lowered again; and again she grappled the bug, whom I now left to his fate. In half an hour or so I pulled up the string; and the dangling leg, if it could have spoken, would have said, with Tom Hood's sailor, "The half that you remark is come to say his other half is bit off by a shark," for the body was gone. These wolf spiders have bodies fully an inch long, and would measure three inches from

tip to tip of legs. The tube-builders are the females; and they only use the tubes during the process of raising young, for the sake of greater security. As soon as these are hatched, they leave the dens, and roam about, seeking their prey. The males after impregnating the females are killed by them, sucked dry, and even the remains chewed up in the form of a pellet! The females in breeding time are extremely shy, and it was only with great difficulty that I could approach them without seeing them slip into their holes quick as thought.

One evening, about from twelve to twenty-four hours before No. 1 appeared with her egg sac, she exhibited the most remarkable fearlessness, absolutely refusing to go into or be poked into her den, although surrounded by a company of ladies and gentlemen on the lawn. I suspect it was extreme hunger and the maternal instinct that made her so bold. She was exhausted by the process of elaborating her eggs, probably, and had come out for food.

When the egg sacs were completed and attached to the abdomen, the proprietors would come out and stand, head toward the den-mouth, to sun them. Doubtless the heat of the sun is essential for the maturing of the eggs. No. 1 stayed within two nights and a day while constructing her egg sac. Lycosa naturally shows great attachment for this, seizing it again and again if it be taken from her.

The mouth of Lycosa No. 3's tube is the entrance to an exactly vertical well (vertical, that is, until the elbow is reached) with a funnel of

cobweb and dead leaves flaring out and up among the grasses. I should hate to be the insect to fall into this frightful well, with a hungry, green-eyed monster at its bottom. I notice the ants are too circumspect to do more than peer gingerly about.

The hearing of spiders is known to be very acute. Even when their heads were out of sight in the tube, they detected my distant and most stealthy approach, seeming to prove what has been guessed, that the hairs on their legs are organs of hearing. The spiders are all very cleanly, and may be seen brushing and cleaning their foreheads and eyes with their hairy palpi as a cat does with her paws.

My wolf spiders are close cousins of the tower-building kind described by Mrs. Mary Treat, at various times from 1879 to 1890, in the *American Naturalist* and in *Harper's Monthly*. Instead of building a funnel, as mine do, hers build a little pentagonal pen of sticks above the mouths of their tubes, like a rail fence around a pig-pen. Her *Tarentula turricola* corresponds mark for mark, color for color, with my *Lycosa tarentula*.[1]

Magliabecchi — the dusty, snuffy old Florentine bookworm, who never wrote a line as the fruit of his studies, but lived all alone, close to the bone, in a house full of books, and cared not for looks — had a house infested by spiders. When his friends visited him, he would cry out: "Don't break that spider's web! Look out for that spider!" Wedged in between two rows of books, with charcoal warmers fastened to his

[1] See Appendix, last two pages.

arms in winter (on which he often burned himself), he read and read and read. He kept his eggs and bread and money in a drawer, "danced with the cat, made tea in his hat," and never went but twice from home in his life. As Edward Lear might have put it, —

> There was an old man of Firenze
> Who loved spiders and musty scienze:
> He ate little but eggs, and had monstrous thin legs,
> And never went out of Firenze.

Certain spiders are expert aeronauts. On a fine sunny day, when desirous of a ride, they get atop of a fence or bush when a gentle breeze is blowing, and, turning their abdomens up in the direction of the wind and head down, spin several threads. As soon as they feel by the pull that the thread is long enough, they let go and drift away, immediately weaving a little mesh, or balloon-basket, in which they ride safely whither the wind carries them. Darwin during his voyage with the "Beagle" found them floating out at sea, six miles from land. On fine days one may often see the air full of these gleaming threads. McCook thinks that they may have the power of lowering themselves. For he carefully observed one day how one secured her descent by "pulling in the floating lines until they gathered in a minute white pellet above the mandibles. As the lines shortened, the buoyancy decreased"; and the spider sank until she reached the grass ("Tenants of an Old Farm," p. 198). The pulling in of the threads corresponded to the aeronaut's throwing out of sand ballast.

After a refreshing half-hour in the heavy dew one morning, observing those little pieces of spider mechanism, the fairy napkins of the lawn, I figured out a sum by which it appears that, if one man could in a night weave out of his own "innards" a pleasure tent three hundred and fifty feet in diameter, and stretch it over the trees of a forest, fastening it securely to the ground and tree-trunks by cables, he would be doing no more than the Liliputian lawn spider does over night, in proportion to its size, in flinging its web over its six square inches of grass spears. Pretty good job for the little spiracle-breathing athlete! The countless numbers of these webs astonish one. Your lawn may be covered with napkins of dew; but, if you look close, you will find hundreds and hundreds between these, so small as not to be seen but by close inspection, and at the bottom of each a tiny black spider. From my observations I calculated that an acre would contain 250,000 of them.

Daddy Darwin (to borrow one of Mrs. Ewing's titles), or Darwin *père*, has a fine steel plate in his "Botanic Garden" of a South American Cypripedium orchid, the flaring petals and sac of which look like a bottle-paunched spider. Erasmus D. affirms that probably this mimickry is to scare the humming-birds off, so they won't steal the orchid's honey. This must have been amusing reading to his illustrious grandson, Charles, who gave so many years of his life to the study of the cross-fertilization of flowers by the aid of insects. But, to be

absolutely sure of my science, I first hunted up Charles Darwin's work on the fertilization of orchids, and got no light there; but in Ernst Krause and Charles Darwin's "Life of Erasmus Darwin" I find (pp. 158, 159) that this theory about Cypripedium *is* an error of the doctor's, most of whose theories turn out to be remarkable anticipations of his grandson's discoveries. Krause, I may mention, finds that Erasmus Darwin was *the first* to construct "a complete system of the theory of evolution."

It was some years after we had been growing the ashen-white La France rose before an elegant large white spider, with ashen-reddish streaks on his side and a gold spot on his head, found us out. I suppose they might have drifted up to the hill-croft in their silk balloons, or come in from the milkweeds in the fields. They are remarkably handsome fellows, and try to hide under the rose or between its petals, when observed, or else drop to the ground, paying out a silk rope from their spinnerets as they go, so as to have a ladder ready for climbing up again when the danger is over. (When a spider's house gets afire, he need never burn up, like the lady-bug's famous children, for want of a ladder.) The interesting point about these rose spiders is their protective color-mimickry: they are almost the exact tint of the rose on which they perch. Their plumpness would make them a delicious titbit for the birds; and they would suffer, were it not for their color. I notice a similar spider on the white blossoms

of one of the viburnums and on the Asclepias, or milkweed. There are Javanese spiders that exactly imitate in form and color a bird's dropping on a leaf. Flies are often attracted to such things: imagine their surprise when the supposed bird-dropping develops terrible poisoned pincers, that grasp them, and fill them with instant torture!

For some years, in summer, until, alas! he was killed by the neighbor's bulldog Caliban, we enjoyed the society of a gray old woodchuck, whom we dubbed Vanderbilt; for he seemed to have several residences. In order to reach an adjoining clover field, and yet not get so far away from his cave under the old stone fence that the dog would head him off, he was obliged to dig an outlying subterranean fortress among the semi-wild grape-vines on the hillside close to the house. He carried out by night several wheelbarrow loads of alluvial gravel, which was utilized by his human fellow-inhabitants for walks. Often, on dewy mornings, looking out of my window at five o'clock, I would see him standing on his hind legs in order to get a good view, eating clover blossoms and looking fearfully around between bites. The cat, Mrs. Gummidge, and he were seen eying one another suspiciously; but they were never known to come to an encounter. Vanderbilt was regarded as the tutelary divinity of the croft. The last of the aborigines is the woodchuck, outlasting the red man, holding his own stoutly in almost every farm of New England, the *habitan*

of the picturesque stone fence with its clambering vines.

I don't wonder Thoreau liked the animal, and liked his woodchuck cap. The only wonder is that he didn't have a whole suit made of the skins, like that emigrant who arrived in the United States wearing a coat made of about a thousand mouse-skins. (He must have been a very Pied Piper of Hamelin, or lived near the Mouse Tower of the Rhine, to get so many.) Mr. Joseph E. Chamberlin thinks the woodchuck might well be regarded as the tutelary animal of all New England, and, apropos of my woodchuck, writes that the animal "comes a great deal nearer to being the really typical national universal 'critter' of this North American Continent than any other living thing, four-footed or winged." And we must agree with him. As for its bodily make-up, I think the bright black eye and delicate pretty little ears and vegetarianism of the animal show refinement, and offset its shambling gait and pudding-bag of a trunk.

The scientists call this marmot the "bear-mouse" (*Arctomys*), and the Canadians the *Siffleur*, in allusion to his shrill whistle. Although these troglodytes sleep in their burrows most of the day, they are yet fond of a sun-bath, and will occasionally climb a tree and bask there in the warmth, or sometimes will lean up against a tree-trunk in the sun, eyes closed in sleep, paws hanging down, and head inclined on breast. When the leaves fall and the frosts get sharp, Old Pudding Bag hies him into his

den, having first carried into the central chamber a goodly supply of bedding in the shape of dried grass. This is some twenty-five feet long and about three feet under ground. Here, rolling themselves up in the hay, the woodchuck family lie absolutely torpid until March, eating nothing the while. The main entrance is blocked up with earth to keep out intruders and the cold air; but a second minor exit is always tunnelled, with a very small opening amongst weeds or stones. This is for a way of escape. The animal always leaves the burrow by this entrance in spring. Sometimes a skunk takes possession of the fine underground abode. The litter of four to eight young woodchucks, when old enough, play at making burrows for themselves, as boys build wigwams and girls doll-houses. These little burrows are, however, never occupied by the new members of the family when they finally separate and marry off with neighboring "chucks." Audubon in his "North American Quadrupeds" gives mighty interesting (because true) narratives about "thawing out" torpid woodchucks.

Foraging about blindly, one morning, in the search for the amphitheatre, or earth bowl, that lies about a mile from the ruins of "Leif Ericson's House" at Gerry's Landing, near the James Russell Lowell residence, suddenly, lying at full length by a lonely pond-side, I came upon the mate of Thoreau's Elisha Durgin, in the shape of a shoeless, bareheaded, unshaven man, with red hair, pipe, and trousers

rolled up to the knee, displaying red, hirsute, and blotched feet and a pair of superb calves.

"I've been trying to catch some gold-fish, but haven't had much luck," he said. "You see that kingfisher out there? There! watch him."

Just then the bird, that had brought up in mid-flight, beating his wings rapidly while he gazed downward with piercing glance, shot down quick as a flash, poised himself a foot from the water for the fiftieth part of a second, then plunged *ker-chug!* a foot under water, and emerged bearing a gold-fish in his beak. What sumptuous fare for him it was! It was droll to see with what ease the despised bird, with its little brain, so outwitted the man. And you didn't see why the kingfisher was not as much entitled to the golden beauties as his wingless fellow-animal on the bank, who growled at him so bitterly.

"That's the reason fish is scarce," said John. "There's five or six o' them fellers around this pond. I'd 'a' shot that one 'if I'd 'a' had my gun. I saw a loon here yesterday. He's down at Fresh Pond now. I once shot twenty times at a loon on this pond, and got him at the twentieth shot. Loon is hard to hit. This fellow'd dive at every shot, at the flash of the cap, dodge the bullet, and come up away at the other side of the pond.

"Last year I caught three hundred and sixty mushrats and eight mink. Mushrats is fond of celery. Their fur is no good in summer, when they are breeding. I trap 'em in winter. The

A Down East Muskrat.

fur is so thick you can't shoot 'em to kill unless you hit 'em in the head. Then they turn over on their backs, and float dead."

John then branched off on to the water-lily business. I learned that he did a regular trade in water-lilies and gold-fish with Boston florists.

While we were talking, something happened that neither of us had ever seen before. There flew by, across the middle of the pond, a snow-white bird, a little smaller in size than the robin, pursued by a swarm of persecuting English sparrows. It alighted on a tree at a distance, looking like a bit of pure snow against the green. But its enemies kept up a persistent attack. Poor thing! It paid dear for its singularity.

Albinos among birds are not so rare as might be supposed, although they are so in comparison with the myriads of birds that exist. Boston newspapers for only two years record the following, which I clipped and filed away: —

A white sparrow appeared in Philadelphia in the neighborhood of 22d Street and Columbia Avenue. He proved, it was said, to be a reconciler of two warring factions into which the birds had been divided. In California a mud-hen, two quails, and a young jay were found to be partial albinos. The jay was discovered by a little girl in Yuba County. She brought it up by hand, and it continued to be white when full-grown. For three years a half-white robin appeared every spring on Asylum Hill in Hartford, Conn. She raised three broods, none of which were white. A white kingbird was de-

scribed by the Norwich (Conn.) *Bulletin*, July 15, 1880. A white swallow was reported in 1880 as seen in Hertfordshire, England. In the same year the Chicago Audubon Club employed boys to capture, by trap or snare, a white crow near the mouth of the Kankakee River. His neck and part of his head were coal-black. The Boston *Transcript's* "Listener" gives, May 8, '97, interesting descriptions of partially white robins, one of them with a white stripe down the back.

To the foregoing these may be added: —

On Dec. 26, '79, a white bluebird was killed in New Haven, Conn., by R. H. Morris. A pure white crow was caught on Taxada Island, B. C. (about 1894). It was taken from a nest in which were several black crows. It is interesting to note in the museums that the large African crow (*Corvus scapulatus*) has a snow-white breast and white collar on back. The crow of North-eastern Europe, too, is gray. Ovid and others say the crow was originally white, but that, when sent by Apollo for water, it dallied by the way to eat some figs, and was turned black and punished with everlasting thirst. Chaucer gives, in the Maunciple's Tale, an old mediæval version of the crow myth: —

> "Now had this Phebus in his hous a crowe,
> Which in a cage he fostred many a day,
> And taught it speken, as men doon a jay.
> Whit was this crowe, as is a snow-whyt swan."

It knew how to speak as well as a man. It told Phœbus of the infidelity of his wife, which it witnessed. He thereupon slew her, and after-

wards, filled with regret, hated the crow, and, depriving it of speech and song, turned it black, and flung it out of doors.

In January, 1880, a milk-white raven was received into the great Berlin Aviary, to the consternation of the other birds, none of which would eat or drink, they were so frightened. They probably thought it was a white owl or hawk. This raven was a pure albino, with pink eyes. He was taken from a nest full of black ravens in the top of an old tree in the Georgenthal in Thuringia. Perhaps he was a brother of Edward Lear's "rural runcible raven, who wore a white wig and ran away with the carpet broom." Yellowish-white ravens are occasionally found. Shakspere ("Love's Labour's Lost," iv. 3) says, "An amber-colored raven was well noted." White ravens are mentioned by Aristotle, Athenæus, Juvenal, and Lucian.[1] They showed the white feather thus early. Ovid tells that ravens also were all formerly white, but were turned black for babbling what they should not (Bk. II. 8, 9).

To close up the albino story, we may recall Lord Arlington's English "white farm," on which there were two or three hundred white

[1] "A Glossary of Greek Birds" (1895), by D'Arcy Wentworth Thompson, gives me this item. It is a scholarly work. See under κόραξ (crow). By the way, I discovered the etymology of κόραξ in a curious manner. I offer it as an emendation to Liddell and Scott's Greek Lexicon, which in the latest edition says the root of κόραξ is from the onomatopœic word κράζω. But I heard a crow say plainly (close by me, one day, when all was quiet and a fog hid me from view), *Ko-rax'*, in quite a matter-of-fact, conversational tone. I at once saw where the bird got its Greek name: it told it itself.

pigeons, a white peacock, snow-white geese, turkeys, goats, horses, cows, pigs, squirrels, a white doe given by the Queen, and rats and mice by the Prince of Wales. Even the cat and the cockatoo belonging to the farm-keeper were white. All of which sounds like a story from Grimms' "Fairy Tales," but is yet true in every detail.

Midsummer is the time for studying the beauty of skies, and especially sunsets and the moonlight. Winter is practically the best time for sunrises, for the simple reason that we and the sun rise nearer together then. True, it is better to hear the lark [robin] sing than the mouse cheep (motto of the Douglases of the Border), and we agree with Dante that

> "Seggendo in piuma
> In fama non si vien, nè sotto coltre."

That is, you can't attain fame in easy-chairs nor under bed coverlets. But five o'clock is early enough for most of us. If you are a thinker, you get your clearest thoughts before rising. You awake, and there lies your idea, lucid and bright, floated up out of the ocean of the unconscious, like a sparkling bit of sea-weed or a starfish stranded in the ebb tide.

What gorgeous effects were given by the "red sunsets" of 1883–85, due to the dust of the Krakatoa eruption in Sunda Straits, by which thirty-seven thousand persons lost their lives! Every clear evening for three years the sun set blood-red in a crimson Indian-summer

sky. If, as was a fact, the eruption was so awful as to be heard three thousand miles away and over an area equal to the thirteenth part of the surface of the globe; and if 200,000,000,000 cubic feet of dust and vapor were hurled to a height of twenty miles above the surface of the earth, — it is easy to see how the dust would drift around the globe, borne on the wings of the great trade-winds, and so produce the phenomena we witnessed.

Not everybody is aware by experience that in many sunsets there are three distinct afterglows. If you are patient, you will see them. The intervals between them are somewhat long. In the first the colors are brilliant; in the second, cool grays and apple-green appear mingled with the reds and purples; and, finally, there is a faint phantom flush, reflected from far-up cirrus probably, which lasts but for a moment. Shall we call this last the palingenesis of the faded rose, the sun, — the phantom of itself glowing in faint cramoisie far up against the lucent crystal sphere?

People who have only seen the tame skies of the North think the sunset in Turner's "Slave Ship" exaggerated, untrue. But his color palette is not extravagant to those who have seen the sunsets of our South or of Italy. Those who think it is, turn to the moral in the picture, and think that the chief thing. It is true that Turner painted the labor and sorrow of men, and there is a profound and touching moral in "The Slave Ship." But, if the attention is bestowed exclusively on this, and is occupied

with the negroes' limbs and the fetters of iron, or even with the impossible great fish bursting out of the foam on the right, the intention of the painting is missed, which is to show in the restless dazzle and splendor of its color, its torn clouds, wind-lashed waves and the depth of its mighty wine-colored sea-troughs, a nature-poem, a sunset symphony in gold and crimson and purple and blue. The picture is to be viewed from a distance.

To the lover of the beautiful and to the gardener a summer moonrise presents different aspects. One can complacently regard it from the point of view of both. When my day's work is done, and I look off over a twenty-mile landscape and see through the trees in the foreground the full red moon hanging over the sea like one of those fiery domes of the City of Dis in Dante's poem, and watch it, as it rises still higher, assume a golden color, dinted with all its spots like one of Schliemann's old Mykenæan gold masks, and pouring its spokes of delicate vitreous light into the dim bosks and cavernous interspaces of the forest, while an amethystine mist half hides the landscape and softens all its outlines, I am in one mood. And when I am thinking of the changes of spots in the goose bone as a sign of weather changes, and am considering the light of the moon as a good time in which to plant peas, I am in another mood.

About the dark of the moon and all that,—the farmers and simple folk are right after all. Dr. Robert Mann, of Scotland, perhaps the first of living meteorologists, has as good as proved

it. It appears that the dark moon does actually chill our earth, in this way: in the dark of the moon — *i. e.*, when no sunshine falls upon it — the temperature of the satellite's surface is 219 degrees below the freezing point. The heat radiated from its surface in producing this frightful degree of cold melts the clouds in our upper atmosphere, and thus enables the earth to radiate its heat off faster into space, and consequently get chilled itself, thus making it better for tender germinating plants to be started in the light of the moon.

It turns out, too, that there is truth in the old British idea that, when the new moon is seen with the old one in her arms,— that is, when the entire orb is covered with faint adumbrated light, — bad weather will follow. For the faint luminosity of the dark moon is simply our earth-shine reflected on it. When our atmosphere is cloudy, more light will be reflected, the clouds serving as a kind of reflector. But in Great Britain the cloud-area is almost always to the west, whence most of their storms come. So, when the adumbrated light of the moon is seen to be brighter than usual, it shows that rain clouds have probably formed in the west, down beyond the horizon-rim of the ocean.

VI.

THE SERE AND YELLOW LEAF.

THE characteristic fruit fragrance along the suburban country roads of Boston in September and October is that of the quince. Its pungent, sub-acid perfume is always grateful to the nostrils, whether you pass it hanging on the bough, or inhale it in the sunny room where it is maturing its golden flesh. One can well believe that this Cydonian fruit was, as the rabbins say, the fruit that tempted Eve in the garden of Eden; for in the Orient it is as soft and mellow as a pear, and is eaten from the bough. It was the emblem of love, and was dedicated to Venus. Some say it was the dragon-guarded apple of the Hesperides. The perfume of the Persian quince is said to be so powerful that, if there is but a single one in a caravan, its odor becomes known to all the company.

You catch also, these autumn days, along the roadsides wafts of soothing and pungent fragrance from fields of celery in the lowlands. The tender, delicious part of celery is the white heart that grows in the darkness after it has been taken up and stored under cover with its roots intrenched in earth. Out of the darkness and sorrow of its gradual death is born the rich-

est product of its life. The sweet perfume of the ambergris is the product of disease in the whale; the most fragrant woods are those that are decayed; leaves and blossoms often yield their sweetest incense when crushed; Scott's "Bride of Lammermoor" was dictated from a bed of acute pain and composed in a kind of trance of suffering. Yet suffering must not utterly crush. Ruskin is right in saying that all suffering *per se* is loss, and not gain. Deeper sympathy and strengthened moral fibre are a compensation for this loss, but an oversensitive or delicate nature may not experience the elastic recoil necessary to restore the moral and physical fibres to their normal tonic state.

To a boy, autumn would not be autumn without the pleasure of hunting for wild fruits and nuts. Undoubtedly, it is a part of the Indian-wigwam-making stage boys all pass through.

The chief pleasure of the thing is the discovery, the getting something for nothing. The gratification is like that of our dreams, when we pick up whole handfuls of coin some one has dropped. If you should present a boy with a bag of nuts just as he was starting out joyfully with stick and bag for a day's pleasure, he would feel that he had been defrauded, though perhaps not exactly knowing how. Or, if my distant neighbor J. T. Trowbridge were to keep bushels of chestnuts as presents for the mickies, their desire to climb and appropriate the fruit of the noble chestnut-tree in his front yard,

glistening with its brown and glossy half-opened burrs, would be as ardent as ever.

Even as men and women, we are not averse to a nutting or berrying stroll. That glorious old boy, Chaucer, knew all about it; for his wicked Pardoner says the souls of those he had buried might go a-blackberrying in the other world, for all he cared: all he wanted was their pence, and their shades might then wander at random here and there in Purgatory, like the thin ghosts of Hades, for all of him. That wandering at will, carelessly, and the joy of discovery, are the kernel and sweet heart of berrying. And I rather think, of all berryings, a blackberrying, maugre the thorns, yields the most solid pleasure. The fruit piles up so clean and firm and fast that your pail is soon full. You pick usually in the shade, and don't have to broil in the sun for hours, as in picking huckleberries or blueberries or strawberries; and there is no hulling or picking over required. Only you must be where the fruit is abundant. Near "The Knobs" of Central Kentucky, twenty-five years ago, I saw large rich blackberries, gathered in the fields and woods, sold at ten cents the gallon pailful.

Wild autumnal fruits are scarce in New England compared with their abundance in the Mississippi Valley region. Along the river bottoms of Ohio we boys used to pick the squshy pawpaws when we went swimming in "the creek." They were rather sickening, unless you were used to them, but good to the taste of a hungry boy. The pawpaw looks like

an abbreviated sausage. It is not hardy north of Cincinnati, though it is grown as a curiosity in a sheltered place in Central Park, New York City. The taste is a cross between a May-apple (*Podophyllum peltatum*) and a banana. Like the persimmon, the green pawpaw is only fit to eat when blackened by frost. It never gets yellow as it ripens, but black. It was a great favorite with the aborigines, who found it where it loves to grow to-day, along the streams where the soil is rich and the frosts of autumn late. Maurice Thompson once sent a box of pawpaws to a Boston author, but they were caviare to him. Thompson was much disappointed. I verily believe he would, at a pinch, find skunk cabbage and Indian turnip a rare relish because wild.

Wild grapes are a pretty evenly distributed autumn fruit. I have found them in all sections of the country east of the Mississippi. In Ohio we used to get beech-nuts, chinquepins, and black walnuts in abundance. Black mulberries, too, growing on the river bottoms,—oh, how ripe and sweet they tasted!

> "Humble as the ripest mulberry
> That will not hold the handling,"

says Shakspere, probably thinking of those on his own tree, cut down by that donkey preacher —what's his name?—that owned New Place. Mulberries are crushed by their own weight, with only a few in a basket. Shakspere, as usual, is right in his field note. As for mulberries, they flourish in New England. There

are a score or more in the neighborhood of Boston, and might be thousands of them.

On the prairies of Illinois we used to gather wild plums by the barrel, and wild crab-apples were as abundant and went to waste as freely as did cultivated peaches there. In the woods surrounding the prairies were shag-bark hickory nuts, and along the borders thereof the little yellow persimmons (*Diospyros Virginiana*) were to be had. A Minnesota Congressman some time ago remarked in the House that admitting iron ore free of duty would have about the same contractive effect on the American market that eating a green persimmon has on the mouth. The Easterners present would not have understood that by experience. But the Southerners and prairie men there knew well the awful drawing pucker the unripe persimmon gives the mouth. Whew! Your jaws cleave together as if held by shoemaker's wax: there's nothing like it. But how nice the soft and withered, and now bluish-black pulpy American figs (call them) were, when, after being mellowed by a few smart frosts, they had been picked and dried for winter use! To a boy they tasted almost as good as dates, which they resembled when dried (another name for them is date plum), though they never quite lost their astringency. The possums don't mind that, though, and get fat on them in the fall. The yellow persimmon is about the size of a small plum (although Japanese persimmons grow as large as Bartlett pears), and in shape is like a sagging bag, or a sea

cucumber: the thick lozenge-shaped calyx lobes adhere to the fruit. The fruit begins to be edible in Southern Ohio as early as the middle of August.[1] Walt Whitman notes in his "Specimen Days" that the persimmon grows wild near Philadelphia; and at Cambridge, Mass., in the Botanic Garden there are two fine specimens, one male and the other female, the latter fruiting abundantly. What sense was there in naming the fruit "Diospyros," — "*grain of Zeus*"? Perhaps the seed-stones, which are like those of dates, suggested it. The tree is our only northern tree belonging to the ebony family.

There were other attractions than wild fruits in those two years of prairie life I had as a boy. My grandfather, who had lost his fortune in railway investments, had gone out there from Hudson, Ohio (John Brown's town), to engage in farming. The natives from whom he bought his land were as wild as the razor-backed "shoats" of the prairie. They made their own butternut suits, — from the sheep's back and the hemp to the dye of the vat; boiled out their own syrup from the sorghum or the maple-tree; and raised their own grain and meat, occasionally driving *via* ford and forest to the town, six miles off, for luxuries for the women and tools for the men. Paint was practically unknown. I can see the grain and knots and stains now of those old sheathed verandas, with seed-corn suspended from the ceilings by the husk, together with long-necked, slender gourds (used for dip-

[1] In '96 I received a box of persimmons on Aug. 10 from my friend Chambers Baird, of Ripley, Ohio. They were picked rather green, but had ripened on the way. A little later came a box of pawpaws.

pers), bunches of herbs, fishing-rods, and the like. Many houses had all the rooms sheathed instead of being plastered, and in the store-rooms and garret were old beehives, hunks of bees' comb, dusty spinning-wheels (dusty part of the time), cradles for babies and cradles for grain, and such gear.

The prairie, which was about six miles in diameter, was surrounded by woods, spotted here and there with clumps of wild crab-apple trees, the brooks edged by persimmon-trees, plum-trees, and blackberry vines, and the ground densely covered with prairie grass and ironweed as high as a horse's back, and all perpetually hovered over in summer by slowly circling buzzards far up in the zenith. It was a wonder-garden to me. In the spring huge flocks of cranes would alight on our more distant winter wheat fields. In winter, when we were husking corn in the field, with piles of it at our backs to fend the wind, it was my duty to pursue, and summarily execute by stamping upon them, the rats and mice which had harbored in the "shock," and which scampered away when we overturned it. I remember I felt no compunction at all (no boys do) at turning those fellows into raspberry jam under my country cowhides, although later I shed tears over a robin I shot, — the first and only song-bird I ever killed.

One of the horrors of my boy life on the prairie was the ploughing up of black snakes and their white "eggs" (or young). I was barefooted, and remember vividly the mighty saltations I gave when I spied, or thought I did,

snake sign beneath the tearing coulter just ahead of my feet. I spent a large part of the time occupied in each "round" in balancing on the plough handles, heels in air; and the result was numerous "balks" in every "land." We had two oxen whose previous owner had named them Rum and Brandy, to the horror and amusement both of my good Scotch-Irish grandparents. It was necessary for me in "breaking up" a field to apply pretty frequently to the alligator hides of Rum and Brandy a long hickory goad that I trailed after me; for neither of these good broad o' brows seemed to stand much in awe of a driver who was but a trifle higher than the plough handles, and one of them actually rushed into a peach-tree in fly time, and brushed said driver and his water-jug ignominiously into the angle of a "worm" fence. It was one of my duties on bad days in winter to yoke up an ox to a rude wood-sled, and, mounted on the back of the animal, convey my aunt to the district school which she taught. On the Sabbath grandfather conducted a little Sabbath-school here, and I can see him now kneeling on the hard floor beside a rude chair, and praying with deepest earnestness and faith to his anthropomorphic Brocken-spectre; and he was nearer the truth than the materialist of to-day. Yet I cherished a grudge (long since gone) against my good foolish aunts for refusing to let me take home "Ivanhoe" from the little cabinet of books nailed high up on the wall. They argued that it was not Sabbath-day reading. Nevertheless, I managed to smuggle it out of the

building and into the wagon, and devoured it in secret.

One of the pleasanter tasks of the autumn, after the harvest of grain, hay, broom-corn, and tobacco, was the making of sorghum molasses. The smell of the sorghum leaves when touched by frost is slightly sickening, but the great brushes of shiny black seeds of this cousin of the sugar-cane are quite beautiful. It is customary to strip the leaves from the standing canes, wedging them down between them in bunches, for fodder for the cattle. My grandfather constructed a crushing-mill of his own invention, with wooden cylinders. We used to get up at four o'clock in the morning, and, hitching a mule to the beam, feed in the long, cool, green canes, which emerged on the other side of the rollers in the form of begasse, letting the juice run down into great pans, where, by fires built beneath, it was gradually converted into amber-colored syrup. Here endeth the excursus on prairie life.

The first book ever written, so far as known, — a papyrus roll 4,400 years old, — is by a man whose theme is the degeneracy of his age and the superiority of former times! But I scorn to plead precedent, and do here let loose my belief that, with serious abatements, this age, *as a whole*, is superior in everything, except literature and the graphic and sculpturesque arts, to any that has come and gone.

It's a fine age for physical comforts and for science. And a good sign of the times is the

increase of outdoor locomotion. Even the bicycle is good for long distances and for lazy people. Anything to get people out of doors. As steel centaurs, the bicyclists, by the way, form a class apart. Wheel and man seem one. A rider will bend over till he seems a tire to his own wheel, as he certainly is to our eyes. Aristophanes, in his Birds, tells of the Skiapods, Shadow Feet, who dwelt in the hottest parts of Libya, and used their big feet as sunshades when reclining. The man-wheel of to-day throws the Skiapods into a deeper shade than their plantigrades afforded. His feet have become circular, and he himself is turned into a whizzing projectile.

Your real travel begins where your old-fashioned stage-coach or tally-ho stands with horses harnessed, or where your yacht lies floating on the blue brine, or where your travelling house-boat or common canal-boat lies moored under the green trees, or where on your cycle you can take a spin of a hundred miles or so through the country. There are plenty of stage lines in America still, — in the Alleghanies, along back-country New England routes, in Kentucky and Tennessee, and other Southern States, and in the undeveloped regions of the Rockies. I recall with keen pleasure a stage trip (outside seat, of course) made, when a lad, over the winding perfect roads and among the verdurous hills of the thrice beautiful Blue Grass Region of Central Kentucky, with its thousand springs issuing from dripping mossy ledges and caverns, its blue vistas, the groaning bins of yellow

maize, and the lawns, sometimes a quarter or a half a mile long, sweeping up to the great pillared mansion. We saw the bullet-marks on Muldraugh's Hills where Forrest's men had fought (it was three years after the close of the war), and the red sides of scores of old army wagons in one place used for fences. *Heigh-ho! tally-tally-ho!* how the sweet peal of the driver's horn sent its merry echoes through the hills and through our tired brains!

Did you ever have a canal-boat ride? If not, you still have before you the possibility of a delightful experience. Select such a picturesque canal as that of the old Delaware and Hudson, which coils through the hilly region of Eastern Pennsylvania and Northern New Jersey. The winding, umbrageous vistas, the mossy old locks into which you sink, the blue curling smoke far ahead among the trees where the captain's wife on another boat is preparing a meal for the hungry men, the songs of birds, and, above all, the entire absence of hurry and of noise make a canal-boat trip strangely restful and interesting.

But, after all, no kind of travel is so full of zest as walking, especially in a picturesque mountain region.

Roads are an index of civilization and a symbol of progress. But to get somewhere is not of so much importance as to get something on the way or at the end of your journey.

If a man never leaves home in his life, he is still travelling. He is engaged in three kinds of going, — (1) by the turning of the earth on

its axis, (2) by its movement forward along its orbit, and (3) by the ranging on through space of the whole solar system.

Leave horse and electric cars in the city to weak-legged gentlemen, pale clerks, and sick women, and banish the wriggling wheel except for long distances. There is something servile in the bicycle: a man becomes his own coachman, engineer. He is turned into a treadmill animal, — like an unhappy dog churning butter. One can't quite agree with the witty dictum of Mr. Bliss Carman, that the moment a gentleman puts his leg over a bicycle he becomes a gent: the statement is too sweeping. Yet there is food for thought in it; and you are inclined to believe it — until, of course, you yourself are seduced into bestriding the fascinating wheel! Apart from the reason assigned there is still a deeper and unsuspected one why a man looks ridiculous and weak on a bicycle: he is in a helpless situation, his only weapon being his ability to take to his (circular) heels in cowardly flight. But a man's glory lies in his strength, in his ability to fend and foin in defence of family or nation. This he is in a situation to do when planted squarely on his two legs or bestriding a horse. As for woman, she becomes the bicycle very well: invalid chairs and other wheeled vehicles seem more appropriate to her frequent infirmities. Let women drive or be driven, but men should ride (for pleasure).

Then no naturalist wants a wheel. Imagine Thoreau on a bicycle for his daily nature study!

You can't cut across fields on a wheel to find the rare punctual flower or study the warblers in their chosen haunts or get the distant view from the hill-top. The quiet, meditative charm of the green foot-path, "of mintes full and fennell greene," is not for the bent victim of the wheel on the vulgar highway. We have not as yet, and perhaps never shall have, in America such foot-paths, or meadow thoroughfares, as they have in England, with their opulent lush grass, ever rain-besprinkled, their rich, flashing buttercups and daisies, and wayside haws in bloom. Our climate is too dry for that. Yet our mountain paths and moist meadow paths are full of attraction. We might have many more than we have.

There *are* thousands of cross-meadow and hill paths, in New England at least. And especially common (in fact, universal) is that farm feature which fully matches in picturesqueness the English path, — the old grassy lane. I live on one of these old lanes, or disused roads, myself, and have seen them by the hundreds in various parts of New England. Scarcely a farm is without them; and, although they do not form a continuous thoroughfare, yet in a nature-ramble they can be taken advantage of so often, and are frequently so long (sometimes half a mile or more), and are so attractive with their green-tangled grass, wild roses, sumachs, wild cherries, locusts, raspberries, blackberries, ferns, mosses, shade trees, birds, buttercups, — the list is endless, — that, the more you think of it, the more you are convinced that they are a full

A Woodland Lane.

equivalent of the English and German path. That the Middle and Western and Southern States lack these old lanes is their loss, and New England's gain; but they might exist everywhere. Burroughs is right: they do not exist now west of the Hudson. At least, I have never seen them; and I have seen much of the rural sections of New York, Pennsylvania, Ohio, Illinois, and Kentucky. Burroughs says: "In all my acquaintance with the country — the rural and agricultural sections — I do not know a pleasant inviting path leading from house to house, or from settlement to settlement, by which the pedestrian could shorten or enliven a journey or add the charm of the seclusion of the fields to his walk." ("Pepacton," essay on Foot-paths.) I take it this is partly due to the circumstance that the rich lands of the Middle and Western States are so much of them seeded to grain and other cultivable crops. Distances, too, are greater; and people have to ride more there.

Thoreau said he had to walk four miles a day, at least, or be ill if he did not. He could walk, he affirmed, from twenty to a hundred miles (starting from his own door-yard) without crossing a road or passing a house. He might have added that around every town in the land there are vast solitudes of forest or plain. He rarely used a road, unless it were a disused one run to the wild. He was cynically pleased to see how little place man and his affairs occupied in the landscape. His lecture on "Walking" is the play of "Hamlet" with the part of

Hamlet omitted: it is a tonic defence of wild over civilized life, but contains very little about walking *per se*. His posthumous essays were carelessly edited; and this one should have been headed "Praise of the Wild." All his books are on walking. His whole life was one long walk; and, if there are Elysian Fields, he is doubtless walking there still, — not in his friend Walt Whitman's "processions along the grand roads of the universe," but in the solitary by-ways of that blessed realm, studying its life and still thinking noble thoughts, breast set bravely forward and "faring there as here."

An all-round, normal married man, who has in no sense cut loose from society nor thrown down the gage of defiance at its feet, — although having instincts for the wild in him that often beat their wings against the bars of convention, driving him forth into the forests and fields, — is John Burroughs. He presents sharp points of contrast with Thoreau. He has abundance of humor: Thoreau had very little. Thoreau is ever pounding the pulpit: Burroughs never preaches, — except by indirection, which is the best way, after all. He has little of the *sæva indignatio* of the brave Concord thinker and reformer; but you feel that in the make-up of this gay angler and forest roamer, bird-lover and horticulturist, there is an ample supply of that moral fire hidden somewhere out of sight, — shown, for example, in his lifelong and splendid apologia for his and our prophet-bard, Walt Whitman. His Scotch blood tells. If he wears the thistle in his cap, he carries the rose on his

breast. Under his steel-chain hauberk beats the tender heart of a woman. He has the shrewdest horse-sense on practical subjects, and, if he falls, alights on his feet. The eye of a hawk and the scent of a greyhound for facts he has. A keen critic if he chose: see how he handles Emerson, and lays bare the limitations of his and our revered thinker. His critique of Emerson, followed up by Walt Whitman's searching estimate a few years later, made the Concord knight reel in his saddle. It was all in knightly courtesy. Burroughs wielded the lance of Ivanhoe, and Whitman hurled the mace of a Cœur de Lion against the Emersonian shield. The service was needed: the spell of idolatry was broken. But, after all, Emerson had only a few feathers of pride and haughtiness shorn from his helm. The man still towered in unassailable strength, and will forever so stand, a protagonist and leader of all daring Childe Rolands seeking the secret of existence and all Sir Galahads in search of the Holy Grail of a pure life. But the chief service of Burroughs is to cheer. He makes you in love with life: Thoreau makes you dissatisfied with it. The effect upon your system of an afternoon with John Burroughs is just about that of a delicious plate of strawberries. This fruit, he says, makes those "faithful handmaidens, the liver and spleen, nudge each other delightedly." So a page of the "Lambish quintessence of John" will take all the kinks out of your head and send a thrill of good feeling down your spinal ganglion, and clear to your toes. There

isn't a despondent thought — not one — in all his works. They are sunshine in preserve, an electric battery of brave, cheery thoughts, to say nothing of their choice nature-lore, set down in English limpid as a mountain stream. He is booked for a long journey down the roads of time.

To return to our theme of walking from this excursus on Thoreau and Burroughs. I enjoyed three walks in picturesque hilly country, when a lad, which I would not exchange for all the car or boat rides of my life, — two hundred miles with a friend over the old, disused, grassy stage route to Mammoth Cave; a walk in the Catskills and beyond for fifty miles; and one of two hundred miles in Pennsylvania, mostly in the Alleghany range.

Can we doubt that Shelley and Mary Godwin and Jane Clairmont got immense enjoyment out of that tramp from Paris to Lausanne? (even if the women, poor things, did wear kid shoes and silk dresses and stays!) De Quincey calculated that the poet Wordsworth and his sister Dorothy walked 170,000 miles in their lifetime. They made nothing of thirty or forty miles a day. (Wordsworth's legs, that served him in such good stead in walking, were certainly not ornamental, remarks De Quincey, having been condemned by every female connoisseur. But it doesn't necessarily take fine legs to write poetry, so they need not have complained.) James and Harriet Martineau, in their Scotch tour, walked five hundred miles. Robert Browning and his sister Sarianna were famous pedes-

trians. Stuart Mill and Charles Lamb were fine pedestrians. Kit North was a prodigy in walking. Some of his feats were: walking seventy miles to be present at a Burns festival, where he electrified the audience with a before unheard of eloquence; walking from Liverpool to Elleray, a distance of eighty miles, within the twenty-four hours; and stepping over (as an uncle of mine who had the same ambulatory habit used to say) from Kelso to Edinburgh, forty miles, to attend a public dinner. Then there was William Hutton, of Birmingham, England, who, one day in his eighty-third year, walked thirty-two miles, and in his ninetieth year walked ten miles at a stretch, remarking that, when he had his full vigor at eighty, he could walk forty miles a day. Charles Dickens had a walker's cable-steel legs. He would get up at two in the morning, after a vain attempt to sleep, and "walk thirty miles into the country to breakfast" (his own words). He described himself as "always on the road," either in town or country. But he lamed himself for life in '65 by over-walking in the snow with wet shoes.

What keen pleasure such fellows as Goldsmith, Bayard Taylor, Ralph Keeler, and our recent Lee Meriwether extracted from pedestrianism their books can only faintly hint! It is the wayside flowers, the sunrises and sunsets, the continual flow of good spirits, the oxygenated blood, the very mishaps experienced, the companionship of your friend, the fine appetite, strengthened muscles, the restful fatigue, the sound slumber, the pleasure of discovery (you

never know what fine scene awaits you around the next curve), the talks and meals with the farmers, the excitement and uncertainty about your meals and lodgings, the learning that it won't kill you to sleep in the open air if put to your stumps, nor to go hungry a few hours at a pinch, the feeling of self-reliance, of doing things yourself, of direct contact with the brown earth, and, finally, the curious atmosphere of domesticity and cosiness belonging to a country road, — these are the sources of the walker's pleasure. James Russell Lowell envied the tramp at the foot of his garden. Poor fellow! (Lowell, I mean, of course), smothered in the dust of his dignities and conventions.[1] Why didn't he have the courage of his convictions, and, taking a wallet and cane, set out on a tramp himself? As long as you pay your way, what do you care what you are taken for? Wear the knee-breeches of the bicyclers as a kind of semi-uniform (if you will feel better), and get up into the mountains: tramps are too lazy to climb there. A few words and a taste of your purse set you right with your farmer. Small things don't annoy an earnest walker. During the battle of Lake Thrasimenus, between the Romans and the Carthaginians, there was a heavy earthquake; but it was not noticed by the combatants.

A long walk on an empty stomach is a bad

[1] I am sorry to record that it was he who boomeranged himself so badly in the eyes of posterity by omitting the Good Gray Poet's name from the list of bards to be carved on the Boston Public Library, when asked to draw up the list which now appears there. To Lowell, Walt Whitman's lines were doubtless but as long black hairs combed out of the tail of Antichrist: he wasn't Orientalist enough to understand such vigintipedalian verse.

thing — for a grown person. But Diodorus (I. 53) says that Sesostris, when a boy, was obliged, with his boy companions, to run every morning before breakfast a little jaunt of *twenty-two miles*. Seems incredible; but Red Indians in our day could do it, or a Peruvian runner with a kola nut to chew, or the Mexican native mail carriers. Trained and dieted boys can stand a good deal. Besides, we don't read that Sesostris didn't have a bite before he set out. Even an untrained, ordinary healthy boy has the endurance of India-rubber. A gentleman in Pittsburg put a pedometer on his boy, and found that during his play he walked, on an average, nine miles a day. A pedometer put in the dress pocket of a lady of my acquaintance, supposed to be a semi-invalid, showed that she was walking five miles a day in her house. Our South American Indian carriers' feats (and those of our own athletes) fully match the performances of the ancient Greek runners, — such as Pheidippides, who ran from Athens to Lacedæmon in two days, a distance of one hundred and forty-two miles; or (still more wonderful) Philonides, the courier of Alexander the Great, who ran from Sicyon to Elis, one hundred and fifty miles, in one day. Amystis accomplished the same feat. This is at the rate of six and a quarter miles the hour for each of the twenty-four. These runners (I suggest) probably had the same gait that our Indians have, — a kind of lope or gliding jog. The Indian does not walk with a swing, or plant his foot down with a shock, as we do: he peels his foot off the ground,

and settles it in place before the weight comes on it, and so glides noiselessly and tirelessly on. It is not a handsome gait, but it makes the ground spin away behind him most marvellously. I have discovered, by the way, that one can gain just a step out of every seven by lengthening his stride. This kept up would enable one to gain a mile in every seven. With the bicycle, however, on a level road, you measure sixteen feet with every step on the pedal.

VII.

LENGTHENED SHADOWS.

EMERSON'S "tumultuous privacy of storm" applies to the outdoor as well as the indoor aspect of a storm. In one of our Eastern "blizzards," or driving snow-storms, you will be pretty sure, as an observer of wild nature, to enjoy a monopoly of *al fresco* life for a few hours. See how it thickens the air as you look at it out of the window. On with ulster, storm-cap, and gloves, and out into the open to enjoy the game! What metaphor shall paint this horizontal hurricane of snow and wind? Shall we say that the wind gods are pelting the bowed cedars with viscid cream-candy, every clot of which sticks? Perish the base commercial trope. Say, rather, that an army of sightless couriers of the air, with a one-thousand-mile front, are rushing out of the north, and sowing a mystic grain over the whitened world. There lies your tree-and-shrub-fringed sunken road all blottesque and blurred, with the level gale of snow-smoke driving across it. Even a certain row of folk-houses are passed without your usual irritated feelings. Nature has softened even their angularity a little. "Tros Tyriusque," etc., is her cry to-day. "Fair play for all!"

roars the ruler of the cloud-jinn. Look at that old apple-orchard, — one vast crinkle-crankle of articulated and reticulated branchery, snow-smit, blown through by an endless stream of white fireflies. Those Austrian pines look like hoop-skirted, brocaded dames at court, standing primly in row. The half-buried stone fences are *roches moutonnées*, their rounded backs thick with soft fleece, like the turfy rocks of England. Everything is fairly smothered with the fluffy element. Yon old dilapidated, undulating lath fence around the fowl-yard is a fine *cheval-de-frise;* and a piece of fence-netting edging the same looks, for all the world, like the skin of the sea-serpent hung up to dry. Clean across the road the courtier birches bow, till their foreheads humbly touch the ground before the storm-gods, whose wind-whips are whistling around the heads of the rebellious pines and lashing the flanks of the cedars and oaks.

What is the secret of the joy one feels in being alone with nature in a snow-storm? I stood a long time motionless in the height of one this morning, looking into a little fairy bosk, waiting for the myriad-handed Apparition to whisper the secret, watching for an unguarded movement or a door ajar but for the space of a lightning's flash, that might reveal the mystery. Walt Whitman touches the matter to the quick in his "toss, sparkles of day and dusk"; and Emerson grazes the goal in his "tumultuous privacy" of the snow-storm. Thoreau is on the ground, too, more than once in "Walden." But they don't analyze the feeling. Here are the

ideas (fragmentary and unsatisfactory as they are) that I drew from my fairy dell hung with the eerie light of snow curtains: —

First there is the *color*, a something rare and pure, satisfying one's hunger for ideal perfection; then *purity* supreme; next *light*, every twig thrown out into strong and unusual relief; then *form*, stems and trunks accentuated, sculpturesque; and, finally, *solitude* and *silence*, you yourself the only living thing in sight. Not a sound, save that of the wind, breaks the dead silence, and that makes among the muffled twigs only a faint rustling, as of silver-stiffened robes; not a cock-crow, not a dog-bark, no shriek of locomotive (it is Sunday), no lowing of cows or cackling of hens or blackguardism of Hibernian mickies. All this has vanished, and you stand as if in some Platonic realm of perfect types beyond the *primum mobile* itself. You have a strange pantheistic feeling of kinship for that little shrine from which all deformity and decay have been removed. Is it that I have passed that way before? Surely; for man was once a part of the unorganized elements. We are two-thirds water now; and snow is frozen water.

In the entirely peaceful evening which succeeded the storm, when the moon came and peered over the hill into the stereoscopic wildery of the old lane, it looked into a cabinet of winter rarities like the crystallized poetry of the Alhambra or the Taj Mahal. The curving branches of the barberry and other bushes bore fruit of refulgent diamonds, the splendor not blinding as in sunlight, but gleaming with a

pure lambency such as in summer nights flashes in white flame from the glossy leaves of fruit-tree tops. And here again, in the silver silence of the night, the weird seizure comes upon one, — the thought of identity.

There was something in this bit of sylvan scenery — its soundless calm — that recalled lines in a poem styled "Nocturne," by Katharine Lee Bates, —

> "Beneath the brooding mist abide
> Soft flows of murmurous sound,
> That Silence hath no heart to chide
> From off her magic bound."

This is a stanza almost equal in beauty of sentiment to a passage in "Comus" I never tire of reading and admiring, where the mountain shepherd, while his flock is browsing the dewy knot-grass in the night, listens to noises floating up from the far-down valley, —

> "Till an unusual stop of sudden silence
> Gave respite to the drowsy-footed steeds
> That draw the litter of close-curtained Sleep;
> At last a soft and solemn-breathing sound
> Rose like a steam of rich distilled perfumes,
> And stole upon the air, that even Silence
> Was took ere she was ware, and wished she might
> Deny her nature, and be never more,
> Still to be so displaced."

The soft silence of the snow recalls also what is perhaps the finest stanza of Cardinal Newman's poetry, —

> "Like snow those gentle pleadings fall,
> As soft, as bright, as pure, as cool,
> With gentle weight and gradual,
> And sink into the feverish soul."

Even the streets and sidewalks of the city are for a few hours purified of all their unutterable filth by a heavy fall of snow. Old Herr Winter, with his icings and plasticoings, is a great decorator and garnisher of landscape. In the city familiar scenes are transformed, and a strange silence reigns. Has the heart-beat of "the many-headed beast" stopped for a moment? Snow swirling from high roofs in Vedderesque spirals and mist-clouds; sliding in fluffy avalanche on the pedestrian's head; turning drivers into dusty millers, and driving the newspaper-venders into their sentry-boxes, where, through a window-hole with a frame of snow, only their heads can be seen far in; anxious sparrows lost in wheel gulches and horse tracks of slush, their dinner looking problematical to-day; on Boston Common two joyful setters making the human pedestrians envious by a tremendous frolic in the snow, traversing the entire length of the field many times, barking vociferously, rolling in the powdery element, tossing it up with their noses, eating it to cool their hot blood,—in short, acting like healthy boys (just), and as we poor, weak-kneed mortals would act if we were as glad and iron-sinewed as they. Presently, when the snow had become sleet, it seemed as if the bronze statue of Sam Adams in Scollay Square, with its folded arms, was hinting at this very matter, and pointing a moral—and adorning a tail, too; namely, his own coat-tail, which drooped gracefully downward with its white load from the two buttons in the back. Upon the shoulders was a comical little cape of

ermine. Of his face, only the dark tip of the nose and two black holes for eyes were visible through the mask of snow; and the whole attitude seemed to say, with a defiant, "cocky" air to the seething, lobster-faced, sleet-peppered stream of humanity passing by: "Look at me, I am bearing this infliction as it ought to be borne. Do you see any signs of wilting in me?"

We had here in Boston about nine o'clock on February 11, '96, a queer little Tom Thumb snow-storm, or duodecimo blizzard, that seemed exactly like a practical joke of the sky; and his beaming smile after it was all over helped to make it seem such. The wind had been softly trundling along from the south-west since sun-up, and the sky was clear. Suddenly, out of the midst of it, whirled together like a sand pillar of the desert, the waggish efreets of the air shot forward and along close to the earth a vast mass of dun cloud at the rate of forty-one miles an hour, as the wind-gauge attested. It came with a roar, and like an explosion of smoke. Rooms became almost as dark as night. In the city, horses were frightened and stopped short. Women fled, panic-stricken, for shelter. There was a sudden drop in the mercury; and for a few minutes (five to eight) the snow fell fast, whitening the ground. From my window I saw a disconcerted crow beating his way in the teeth of the gale as, through the whirling mix of gray cloud-smoke and level-driving snow, he sought shelter in a bunch of cedar-trees, — like Caliban's scudding raven, in Browning, who whispered that poor wretch's defiance in the ear

of Setebos. Then almost in a moment the cloud drew away out to sea, and Sun and Earth smiled at each other again. This little snow bluster brought to mind Burroughs's criticism of Emerson's poem on Snow, — that the snow does not come "announced by all the trumpets of the sky." But (begging my friend Burroughs's pardon) it does, though, sometimes, does it not? And just such blustering, blizzardy storms, accompanied by our heaviest snowfalls, produce the effects Emerson depicts. The storm comes with a tremendous bluster of wind, driving the snow across the landscape and beating it on to the trees. Later the wind may or may not fall, but the snow goes on falling or driving. When Emerson says,

> "The fierce artificer
> Curves his white bastions with projected roof
> Round every windward stake or tree or door,"

he is not describing the silent snow that simply caps with fluffy snow-pillows the fence posts and kennels, but the kind that is carved and curved; and it is the wind alone that does that work. Almost all snow-storms do come preceded by a lull, as Burroughs says; but there are exceptions.

The etchings of the artist Giannino Ghiaccio are an endless study, if you are curious in that kind of art. He is a myriad-handed fellow, the embodied art-genius of nature. There are millions of him, in fact. This winter I captured one of his incarnations, and have kept him shut up in the cold parlor, where he etches brave window etchings for me. In the morning the

stupid sun, like Buffalmacco's ape, sweeps his big red and white brushes a few times over the glass, and my picture of the evening before is gone. But it all inures to my advantage, for I get a new design from Giannino every night to add to my collection. I have just been out to the veranda window, and found the invisible artist working inside; but by close watching I could see his silver crumblets getting cunningly laid on. He was working on a group of sea-anemones, their little spiral hands reached out for food; and around them, spotting the pane, were dabs of sea-moss. Long lines of railways branched out over the design; and here lay anemometer charts, and maps showing network of railways. There were what looked like aimless-darting thread lines, but the removal of one of them would have spoiled the artistic asymmetry. In the corners of the great pane were micrometric meshings of spider-webs. The lower left-hand corner was a mimic astronomic map, full of frosty stars; the right corner occupied by flowery meadows and hills. There were tree-ferns and palmettos of filigreed silver, giant Sequoias; in short, a perfect tangle of tropic life, — palms, bamboos, trailing lianas, and birds of paradise. Evidently, my Giannino is the ghost of Cellini himself, or a Chinese ivory-carver whose astral body has blown about the pendent world, and crept into my *auberge*. Are the artist's designs laid on with a kind of planchette having a hollow silver pencil attached, through which the pigment is drawn out? I should think so, judging from their capricious-

ness. I only know that the work would have cost me a pretty penny if man had made them. And now I am richer than a Rothschild in silver plate, and yet no robber molests me or casts so much as a contemptuous glance at my treasures.

One day last winter we had a shower of gems, the work of other artists unknown to man by name. It was toward the end of February, — the 18th, — and the inflowing, high up, of quantities of warm vapor from the sea on the wings of one current of air, and in the very face of another sliding on from the north-west, proved favorable, with the glass at zero, for the formation of stars and wheels of snow, which kept falling in countless showers all day. They were nearly all six-rayed (some crosses) and frequently with side processes, — no two of all the myriads alike. So all day long the silent work went on. And ever, as the gliding continents of cloud met and mingled, the serried hosts of the sky, fairy Hephæstoi, spirits of heat and cold, seized upon the particles of vapor, and fashioned in friendly rivalry a million starry gems, ethereal-white and light as filmiest down, and fast and faster tossed them aside to fall in showers on the dark earth, where musing mortals, walking amid showers of such miracles, held their breath in secret wonder, letting their thoughts beat against the adamantine limits of mind, if so they might catch but a glimpse of the mystic All at work behind the veil, — the Maker of the makers of these wheels, the vast Anankē, or Fate, that globes the circling planets, gives them their centre-seeking pon-

derous weight, and in their veils of mist entangles the soul of beauty shrined in crystalline law.

To this day, in spite of the brilliant investigations of such crystallographers as Haüy and Mohs, science is unable to explain the *why* of crystallized forms. What is there in the ultimate structure of molecules that, when on a cold winter day you rub off a window-pane with a wet cloth, will at once cover the whole with a spread of curving frost ferns? Why does the water crystallize in *curves?* Why not in cubes, as dried mud does? Why do the atoms of the birch catkin's scales take the exact form (as you see them on the snow) of birds with outstretched wings? Answer: by this form bird and birch-seed alike best attain their object, — flight. Their reason for being lies hid in the abysm of eternity, in the laws of matter. The molecules of matter, indeed, are "like manufactured articles." We seem to surprise Nature in one of her secrets in the phenomena of the crystallization of water. This is the prophecy of the green woodland and the flower garden. But the *why* and *how* are like the *why* and *how* of self-consciousness: crystallization and mind are imbedded in matter, are a part of the *ens entium,* that's all we know. The only secret that the innocent little atoms "give away" in their frost pranks is that the foliage of the window-pane and the pavement is a premonition of that of the tree and the human body, — life latent dreaming on life organic yet to come. The crystals seem to be yearning for the living

organism. Do we touch in them the very nerve of Eternal Will?

Winter, as hinted, is the time to see the rising sun throw "his faire fresh-quilted colours through the sky." Here is a picture of a Christmas Day sunrise glimpsed from my window: above the horizon, flakes of crumbling red gold; broken bars of the same floating in a sea of delicate apple-green; rank on rank, stratum on stratum, of fiery cloud-rack towering up toward the zenith, where in melting hatchellings and mottlings hung a canopy of cirrus fragments richly colored. But presently out of an ashen bank slowly emerged the dull red tip of the sun's disk, and the rolling of the earth-kaleidoscope soon brought back the commonplace gray of the day; but the drench of color had entered the soul, and there in gradually dimming afterglows the sunrise lingered all day, ennobling and exalting.

The last day of 1895 opened with a bell-clear ringing tone in the atmosphere. The temperature was scarcely chilled. No snow. Winter hiding somewhere in the north, his white towers broken, and he himself "chained howling to the Northern Bear"; great guns blowing from the north-west; the sky after rain intensely blue; the sun rising in murrey and cramoisie; swift-flying bunches of cumulus and strata clouds shot through with delicate orange; the myriad-miled roof of the universe all loose and sliding on and on; and up from the south-west the cloud squadrons charging and roaring, like

an army of Lorbrulgrud cavalry. At night the quiet full moon came and looked down upon the earth with not a breath of wind stirring. The thundering cloud-army was by this time hundreds of miles out at sea. How exhilarating the whole show had been! When the sun began to rise next morning (New Year's Day), I caught myself in the act of holding out my arms and balancing my body on the globe, as one might on a round, rolling rock; for from the hill where I stood, facing the east, it seemed as if I could *feel and see* the earth turning as the sun touched the horizon, and then passed from cloud edge to cloud edge as it ascended.

Shakspere's sunrises and dawns are all distinct, individual. He never forgot anything. All the dawns he had ever seen hung in his mind as in a gallery: he had but to select or combine.

> "And look, the gentle day,
> Before the wheels of Phœbus, round about
> Dapples the drowsy east with spots of gray."
> *Much Ado.*

In "Romeo and Juliet" the gray-eyed morn "chequers" the eastern clouds with streaks of light,

> "And flecked darkness like a drunkard reels
> From forth day's path and Titan's fiery wheels."

That is the sublimest two-line description of dawn that exists. These lines alone would suffice to immortalize their creator. They condense into one short sentence a picture of the dawn that young Ruskin amid the Alps beggars the English language of adjectives, and almost

foams at the mouth, to describe. In "Julius Cæsar," Cinna says that the gray lines that *fret* the clouds are messengers of day. A fretted cloud is one whose surface is rippled by the light, or striated by long wrinkles, like a ruffled brow. Then in "Romeo and Juliet" we have still another image, —

> "Look, love, what envious streaks
> Do lace the severing clouds in yonder east,"—

where (says Ruskin, I believe) the reference is not to lace-like lines *on* the clouds, but to the jagged edges of gray light at the crevices that part them. How much is connoted by that word "envious"! It often means "hating" in Shakspere, but not here, I think. The conscious light is described as emulous of the darkness, its rival, and is steadily and eagerly encroaching upon his domain, beating him back little by little until the whole sky is ablaze with many-colored light. Loaded with meaning, too, is that phrase "the drowsy east."

It is pleasant to wander through the market streets of a great city in the weeks preceding Christmas, and see the forests of evergreens, from the size of the little ones that Hans Andersen's rabbit jumped over to the mast-high trees for church celebrations. They give the streets a woodsy odor and a kind of Black Forest village look in general. Mournful and pathetic, though, to see the dead animals in the gamekeeper's door,— the great snow-white hares of Nebraska and the little harmless, berry-eating bears from

Maine, with thickest coal-black fur, — all hanging head downward, with a sad look in their glazed eyes.

Still, one feels quite differently with regard to more cruel animals. Hence it is that I looked without regret one day last winter at two sportsmen about whom, on the road, capered six fine fox hounds. The men were trudging along over the snow, and reported that they had started two red foxes, but after an exciting chase the dogs "bulled the job," as one of them expressed it. Brer Reynard is a hard fellow to tame, judging by the experience of a Boston lady who now mourns a pet fox reverted to the wild state. When she left him to board at a farm which I often visit, he was an "eeny, weeny 'ittle red darling," who would kiss her, climb on to her shoulder, and play contentedly by the hour with a rubber shoe or ball. When she came out to the farm to see him, she found that three or four days or a week of being left to himself had sufficed to remove the veneer of city life and manners he had acquired! An hour's work had no effect: he would none of her. The same day, during a thunder shower, he escaped from his box, and, when last seen, was in hot chase of a young rooster upon a hillside. He and chanticleer disappeared, the latter never to be seen again. But the fox joined others in the neighborhood, and two or three years later I saw on land of the farmer's what was probably his foxship cantering along, light as down; and others of his brethren were afterwards seen looking over a stone wall in broad daylight at

passers-by, but in a moment, like the wily fox in the "Arabian Nights," they "arose, and committed their legs to the wind." Sometimes the dogs fail to kill a fox, even when they have cornered it, the "critters" are such gamey-fighters. Their teeth are as sharp as daggers. Our tame fox, just described, on the approach of a dog would always flatten himself out in the grass, and, when the dog came near enough, make a spring at him: the dog invariably turned tail, and ran. A young friend of mine on the farm alluded to tells me a funny experience of a fox-hunter near by. He was lurking one day behind a stone wall, waiting for the approach of a fox whose burrow he knew to be near, when, happening to peep over the fence, he saw Mr. Reynard and his wife and the whole brood of cunning little foxes having a family frolic right under his nose! The noise made as he put his gun-barrel cautiously through a hole in the fence sent the mother fox scampering in one direction and the father in another, while the little ones sought refuge in the burrow.

VIII.

HUNGRY CROWS AND SAUCY JAYS.

SCARCELY anybody seems to have much of a liking for the crow, who wings his melancholy way as far apart from man as he can get. The reason is that he is a self-conscious, self-convicted burglar and sneak thief. But he is also the friend of man. Does the good in him overbalance the harm? There are a good many *pros* and *cons*, but the weight of evidence is in the crow's favor. Yet such are the ignorance and unreasoning prejudice of farmers that it is undoubtedly due merely to the fact of the crows' marvellous cunning in keeping out of gun-shot and out of traps that they have not long ago been exterminated. This and the toughness of the beasts. To eat crow is thought to be such a bitter and nauseating business that it has furnished a phrase for any humiliating back-down or swallowing of words.

The Greeks record some cute things of the ravens.[1] Plutarch tells us it was they who conducted Alexander to the temple of Jupiter Ammon, and afterward gave him warning of his approaching death. Shortly before the Athe-

[1] D'Arcy W. Thompson's "A Glossary of Greek Birds," 1895. On white crows and ravens, cp. *ante*, "High Noon of the Year."

nian disaster at Syracuse the ravens, says Pausanias, flocked to Delphi, and despoiled the votive gifts of the Athenians there. Aristotle says the fox is friendly to the raven, and Ælian that the hare detests its voice (I sympathize with the hare most deeply). Ælian also tells how in Egypt the ravens beg food of those sailing by in boats, and, if refused, cut the cordage. In Norse mythology it will be remembered that Odin has two ravens, Hugin and Munin (reflection and memory), which he sends forth at daybreak every morning to bring him news of the world. In the time of Hamlet the war-flag of the Danes was a small triangular banner, bearing a black raven on a blood-red ground.

Thoreau liked crows because of their aboriginal ways. He says they flit about the woods and clearings like the dusky spirit of the Indian. Others like the cawing of crows, — Wilson Flagg, for instance. I think, if the truth were told, they like it only at a distance. Joe Jefferson has a special fondness for these gentlemen of the cloth. He has named his Buzzard's Bay place Crow's Nest, and allows no one to shoot any of these birds on his grounds. But Bismarck dislikes them extremely. Lenbach's famous portrait of the man of iron and blood — the expression stern and the eyes full of the lightning of wrath — had a curious origin, says Mr. Smalley in one of his books. The artist and Bismarck were walking in the latter's grounds, when the prince caught sight of one of those detested crows that eat the eggs and young of the singing birds he so loves. Out flamed

his anger; and the artist caught the expression, and as soon as he reached home put it on paper. The Iron Chancellor was right about the crows. Your anger would rise, too, if you should see them, as I do when I walk, sneaking out of copse and grove like great bullies, with the egg of some small bird in their bill.

In favor of the crow are the extremely valuable services he renders in killing mice, grasshoppers, cut-worms, grubs, and other small vermin of the like kind. Then in the winter they give one a feeling of companionship, as they fly through the ruined woodlands or over the desolate fields of snow. There is something cheery and brave in their life that gives us a spur of suggestion. As for their color, you don't realize how gray even the darkest tree-boll is until you see the inky plumage of the crow outlined against it. And what an antique piece of furniture a crow or raven is! A man might be tottering to his grave at ninety or so, and yet have in his house, perched on the back of his easy-chair, a crow or raven as old as himself. In allusion to its longevity Shakspere styles the crow "treble-dated," — three-generationed he means, calling thirty years a generation.

Crows, and jays (their cousins), have larger brains and more wit than any other birds. This is the opinion of Macgillivray and of Professor Parker, the first authorities in the world on the subject. The old feeling of superstitious reverence for the crow and the raven had, then, some reason for being; and it has not wholly died out

yet. Crows learn to know their friends mighty quick. After a month's walking in their haunts they learn to know me in the spring, make no fuss at my approach, and often decline to fly until I am pretty close to them. In the extensive grounds of Wellesley College, where chiefly girls walk and where never comes the slinking fool with the gun, crows have become astonishingly tame, allowing the girls to approach within a few feet of them. It is Una and the Lion, Beauty and the Beast, over again. The cunning crow recognizes that the male is the cruel sex, the killer. Probably, if man should cease to banquet on the corpses of his fellow-animals, the birds would come and perch on his fingers for food at call.

I have said all the good I can for the crows, but I haven't said that personally I like them. I don't. They are interesting nuisances, to be tolerated for the good they do. But, as things are, you can't feel affection for such sad humbugs, such suspicious sneaks, and slumber-disturbers; that is, if you have been kind to them and fed them, and consequently have them in flocks close about your place. To sensitive ears the cawing of these *diræ et obscenæ volucres* is disagreeable except at a distance. You are out in the woods studying warblers, we will say, and listening to their delicate-gay songs,—perhaps trying to identify a new one,—when suddenly some execrable crow spies you; and immediately a whole gang of them set up such a racket that what with that and the deafening

snorts and belchings of incessant railway trains (if you are near them) you wonder the small birds are not frightened permanently away.

The cawing of a parcel of crows reminds me of a set-to with fist and voice between a crowd of Irish alley-women in liquor, all stridently vociferating at once. The crow's guttural spring rattle, which has amusingly been styled his warble, resembles the attempt of a gaunt Scotch laborer, with a crack in his voice and a cold in his nose, to sing one of David's psalms. It more resembles the last gasps of a tightly screwed wooden vise or the drawing of a tarred rail over a fence than a love warble. In the bird world as in the human world delicacy and purity of life are nicely matched by delicacy and purity of voice. Hawks and owls and shrikes and all predacious birds have as coarse harsh voices as do coarse bad men and women. So in the plant world the more delicately perfumed flowers are shy and retiring, but the coarse weeds fairly shout at you along every roadside.

Crows are so extremely suspicious and nervous at the approach of man that it is interesting to see how the cares of maternity can tame even their wild natures and cause them to exhibit a courage one would not expect from the bird that so many smaller birds than they — orioles and kingbirds, for example — whip and chase around the sky. One spring, as I frequently passed down an old grass-grown road in a forest, I used to point my opera-glass at a crow sitting on her nest far up and out on an elm branch: she bore the infliction with un-

shrinking courage, and never budged, though eying me anxiously. Her nest proved to be too conspicuously placed; for, before her young were hatched, that curse of the farmer and the bird world, the silly boy "collectors," had risked their lives by climbing up and knocking down the nest with a long sapling. The next time I went by I picked up the nest, which was very knowingly constructed,—first of heavy twigs, forming an 18 x 12 inch elliptical structure; then a thick layer of soil, matted together with cow-hair (probably obtained in some yard where cows were kept over night); then a bulwark and gunwale of finer sticks and strips of soft cedar bark; and inside of all a soft thick bed of red cow-hair, which with the matted earth formed a capital non-conductor of heat to keep the eggs warm during the cold days of April. For some time after the robbery I never went down through the wood in question without being saluted with curses loud and deep from a flock of crows who had got wind of the outrage. They had formerly been on very good terms with me.

Speaking of the crow's spring call, it should be said that it is the voice of the male, corresponding to the spring song of the males of other species. (It cost me no end of work to establish that fact: it is not in the books.) This spring we had in the neighborhood one with an unusually developed voice. This crow uttered a concatenation of sounds, as if his caws had got tied together in his throat. It was about the noise we make when reprehending a naughty

baby, — uh — uh — uh — uh — uh — uh — uh — uh,— only more prolonged and uttered harshly and rapidly. The fellow seemed to be so stung by fierce desire that, as his "rope and pulley" warble burst forth, it was like an actual cry of pain.

The suspiciousness of the crow toward men is amusing. One day in early spring, when studying birds for the first time, I sat down by a little grassy marsh, retired, with living water running through it and trees around. Half-amused, I said, "I'll try that kissing-squeak on the back of my hand, recommended by the books." At the first squeak, as if it had been the rubbing of an Aladdin lamp, a black shadow flitted noiselessly over the grass, then another and another; and three shiny black crows alighted silently in the tree-tops. It seemed a little uncanny, and I half expected to see them transform themselves into princes or ladies with beautiful tresses, when out, alas! they suddenly spied me, and winged away in great trepidation, a hasty, broken croak or two floating down as they went. There is something sinister in this slinking, suspicious avoidance of man's eye on the part of the crows. Their sombre coats suggest a former dwelling in the realm of Pluto and a dipping in the inky waves of Styx. They seem appropriate to the vicinage of the haunted mountain castle of a caitiff baron in a desolate land, flying about its splintered crags and dark tarns, or painted on the robber baron's shield.

The wrens had a curious retaliation on their

arch enemy, the crow, in one case. A dead crow had been nailed to a tree. The bold little wrens contrived to fasten together the wings of this black scoundrel, and built their nest within the skeleton, using the breast for an entrance. This occurred on the place of Lord Suffolk in Malmesbury, and the crow with the nest is now in a glass case in the picture gallery of Charlton Park, Lord Suffolk's place. These wrens' performance reminds one of that oriole who built her nest entirely of silver wires pulled from a soldier's old epaulettes.

Some wee maidens asked me one day for a story about crows, and received this: —

One day, while wandering in the forest of Niunluogo, hearing the twittering of many birds, I carefully parted the branches that shut out the view of a grassy glade, and saw that a criminal court of the birds was being held. A pinioned crow had been brought in by four kingbirds, two on a side, before Judge Bobolink, who of course had his wig on, and was standing on a grassy knoll, with a small log before him for a desk and a gavel in his claw. His clerk, the house wren, stood before another little log table. The crow was gagged with a tuft of milkweed blossom to prevent his terrific caws of protest from drowning the voices of the witnesses. These were a black-and-white creeper in mourning and a robin. The creeper testified that this deep-dyed villain of the massive beak and the cunning eye had gobbled her young alive. The robin held up one claw and swore that the prisoner had cracked her safe, and stolen thence four

lovely blue-green gems of eggs. Then arose from the audience of birds a wild clangor of like accusations as loud as that raised by Chaucer's Assembly of Foules when choosing their mates on Saint Valentine's Day. Judge Bobolink got white in the face with spinking and spanking and pounding with his gavel, and threatened to send officers Whippoorwill and Thrasher to clear the galleries unless order were preserved. The jury, after being charged by the judge, made short shrift of Jim Crow, bringing in a verdict of "guilty of murder in the first degree." The judge, after allowing him a few incoherent caws of denial, had him gagged again, and with shaking claws pronounced sentence, which was that the prisoner should be held under water by the sheriffs until he was dead. (Jubilant carols in the galleries.) Then the wren put on his spectacles, and recorded the sentence in his book of stitched oak-leaves with a feather stylus dipped in pokeberry juice. His inkstand was a tiny snail shell that hung from his neck in a little horsehair pouch. When the audience broke up, he flew away to deposit the records in the court safety-vault in a stone fence; and Jim Crow was led off by the kingbirds to the nearest brook, and drowned.

I had a good deal of amusement in the winter of '95–'96 in studying crows from the windows. I attracted them by nailing up meat bones on a gnarled old wild cherry and a hickory tree that rise from a rocky copse hard by my thinking and writing shop (say forty feet dis-

tant). The crows had often perched in this copse, yet they did not spy my meat bone till the day after it was put up. Suddenly, when the door was opened after breakfast, three great inky fellows flew up from the bone, and softly winged away. How silently a crow always flies off, when alarmed! Not a caw, not the least sound. Perhaps he is not observed: he is not going to call your attention needlessly, anyway. Hunger could not coax my suspicious wild pets back that day. But the next morning, when the ground was covered with snow and all was quiet, I slyly peeped out of the window from behind the curtain, scratching first a small hole through the chasing of frost, and beheld master crow working away *solus* on the done, but looking around in the greatest trepidation between bites. He seemed to fear an ambush: meat bones did not usually grow on trees in his experience; and he wanted to know how in sin that one got there.

These crows may have been winter visitors from the north, where they are not shot at and so are tamer than ours. They got so happy and comfortable over the look of things (in spite of their first suspicions) around what they regarded as a very friendly Raw Meat Inn that they would perch for hours on the "rum-cherry-" tree in the sun.

When, one day, they caught sight of me behind a window curtain, they became more cautious, and would not alight until they had looked all about, swept a wide circuit with many feints of going in some other direction, and assured

themselves that I was not looking. I was, however, in the intervals of writing,—but more cautiously. These crows nearly made a prisoner of me, and I almost feared to poke the grate or shut a door loudly.

In a few days, when the bone was picked clean, mounting by a long ladder, I nailed an iron pan on the top of the hickory trunk, which had been sawed off square after suffering injury in a gale; and there on that lofty altar I placed a heave-offering of beef and chicken scraps for Odin's birds, the dogs of the air. Having no cat just then, or dog, it seemed a capital sanitary plan to enlist some aërial scavengers to carry off the orts. Yet the plaguey crows wouldn't touch this pan of meat. One of them sat and looked longingly at it for half an hour. But it might be poisoned: it looked suspicious, too much of a got-up look about it. "No," he seemed to say, "you don't run that nut-hook humor on me: I see through that little game, *haw, haw, haw!*"

When, however, I tacked up another raw-meat bone, right by the side of the dish, there was a great commotion. They were much afraid of it; but, finally, one reached his neck out as far as he could, and gave it a peck, and soon he was hard at work on it. It was frozen so hard that it took several days to strip it bit by bit. They were all singularly polite, never attempting, though wistfully hungry, to oust the one who reached the bone first. Perhaps this is partly inherited cunning; for, if all should eat at once, and quarrel over the food, there would be no sentinel to watch. However, one bitter snowy

and windy day, when a row of them had been sitting cuddled up close together on a limb, like so many canary birds, one hungry fellow tried the following tactics on the crow who had the innings at the bone: flying above him, he came right down on his back (the meat was on a slanting limb), hoping to shove him downward. He did so, but the other scrambled back at once, and resumed his place before No. 2 could take it.

All during the crow episode, and long before and after, we were visited every morning by a flock of eight or nine blue jays, — great, strong, saucy, splendid fellows, with erect crests and flashing azure wings, buoyant, cheery, intelligent. It did one good to see their fine dauntlessness and health. A queer thing was their punctuality: at almost exactly the same time, 7.15 A.M., they were on hand every day to get the soft, friable bits of eggshells in the currant patch at the top of the garden. They always came from the same direction, went through about the same series of short flights of approach, and flew away in the same direction. A student of birds soon discovers, as Burroughs remarks of his osprey at the mountain lake, that they are creatures of habit, and move in grooves, just as we do.

On December 6 the ground was covered with snow. But the jays came just the same, and seemed so disappointed that I went out, and scraped away the snow and scattered some pieces of bread around. They rollicked around among the cedars, playing tag, their big eyes, black as

buckberries, glancing saucily around. They exhibited the superabundance of vitality, just, of so many healthy boys, their eyes snapping with mischief and fun. "Ho, ho! this fellow in the cellarage or cave yonder has thrown out some of his bread. Well, I'll take a piece. Pretty flat stuff; not half the spice to it that our blue cedar-plums have. *Cay, cay, cay, good-day!*"

One morning, glancing out of the window, I saw one pick an acorn from a big oak-tree. I went out to the spot where he alighted, and found the ground strewn sparingly with half-eaten nuts. The grooves made by the strong bill down the inside of the meat were deep and vigorously carved. The jay looks very "cunning" when eating. He holds his bit of food between his feet, and stoops down to peck it with regular, pretty, swaying bows, hard to describe, but all naïveté. (And with what indescribable grace the little living aëroplanes, when nearing an alighting place, will hold their wings perfectly steady, and with a long, gliding upward curve come to a pause on the bough! It is the very music of motion.) I tasted one of the acorns, and immediately conceived a great admiration for the bird's courage and ferity of taste; for I could not pretend to emulate him by swallowing a single mouthful of that bitter meat.

One jay soon got hold of the idea of my altar-pan of scraps on the hickory-tree. I chopped him up bits of fat, which he came for every morning. The chickadees, little "frost-proof

puffs," got crumbs from the same dish, and said many a chickadee thanks for them. They hopped around within a few feet of me, their cheery ways and notes (like those of the dainty and Quaker-neat juncos and the ruby-crowned kinglets) doing one good to hear and imparting a like gayety of heart. I caught one of the chickadees picking buds from the young currant stems. But they showed no special fondness for these, and do no harm.

The jays are not at all on bad terms with their cousins, the crows; but they don't venture to be too familiar. One day, when two or three jays were regaling themselves from the pan, a couple of his Satanic majesty's birds drew near on solemn wing. The blue jays gave way a bit. But, while the crows' backs were turned and they were working away on a meat bone in another tree, an audacious jay slipped back, and began to eat of the crows' especial and long-proved property, soup bone No. 1. This jay had a fine flute note, a single musical-clear whistle, something distinguished and foreign in it. The notes of each individual bird were his own and no other's, as in the case of the bobolinks described in Chapter III.; and, as with the bobs, so with the jays, each individual varied his own song. One bright sunny spring-like morning, February 25, while the whole flock were flashing and screaming around, one fellow, perched all alone on a tree-top, amused me much by demurely vociferating for a long time with metallic clink and gurgle the syllables *ko-li'nk*, *ko-li'nk*, (the bobolinks' initial

notes without their melody); and then, suddenly dropping his voice away down into his toes, he would remark, in an entirely different key, "*Stop it, stop it,*" in such a resigned, disgusted way that I thought at first it was another bird. The notes of certain jays I have heard far off in the forest in summer sound often like a bicycle gong and sometimes exactly like the coarse pumpkin-stalk whistle of the farmer's boy; and just the farmer's boy of birds he is. And so all winter these cunning wags kept the whole neighborhood on the *qui vive* with their practical jokes and screaming hilarity. The wife of the neighbor up on the crag fed these jays grain all winter with her chickens. In return two pairs of the birds built their nests on their grounds. The blues would also feed on my crumbs of fat let fall by the blacks as they picked the bone above. Occasionally a crow would condescend to fly down to the lawn to secure an extra nice piece he had let drop.

One winter day there was a terrific aërial riot got up by the jays over some bird they were mischievously expelling from the neighborhood, the cause thereof unknown outside of bluejaydom. Chaucer knew the jay well; and it talks to us the same language it did to him, though *his* speech is sometimes hard for us to understand. In the Man of Lawes Tale he describes a drunken messenger as bewraying "alle secrenesse" by "jangling like a jay." The Hoosier poet, James Whitcomb Riley, paints this bird to the life: —

"Mr. Bluejay, full o' sass,
In them baseball clothes o' his
Sportin' 'round the orchard jes'
Like he owned the premises."

And Thoreau well describes the jay's harsher notes,—"the unrelenting steel-cold scream of the jay" that fairly "tears our ears."

In June the jays and crows get ominously silent. Their cawing ceases, and you wot well the reason: you know they are engaged in slyly slipping around, watching the more delicate songsters' nests, that they may rob them. Don't ever shed tears if you should happen to shoot a crow or a jay.

IX.

POLYPS OF THE AIR.

A TREE is a sort of vegetable polyp colony or madrepore, throwing out by innumerable branches its feelers into the circumambient air. The final cause for being of each separate twig is the life and welfare of the whole colony. When I stand close beside a giant tree and measure my puny weight and strength against its own, I am always filled with awe. And the awe changes to wonder as one gazes at the huge knees of the elm or cypress buttressing up the enormous weight above them, and thinks what a grip upon the rocks and soil the broad reticulated feet must have to enable them to lift that mighty dome of verdure aloft and hold it firm against the shoulders of the assaulting winds; for usually one of these Briareuses will sooner lose an arm than budge his foot from its hold.

There is a kind of awe mingled with pity excited in one, too, when looking at a vigorous young tree enwrapped in the sure-enwinding folds of that boa constrictor of vines, the poison ivy, and branch by branch yielding up its life to the parasite. There seems almost a conscious diablerie in these Laocoön-snakes. Some-

times two of them will wind and wind and intertwist their coils, hard as iron cables and as thick as your wrist, to the very top of a tree. It makes you ache with sympathy to see the unnecessary reduplications of the coils and the apparently superfluous cruelty of the pressure. When the tree has dropped piecemeal to the ground, the ivy has become a hideous shambling tree of itself (so much resembling a tree, indeed, that the people call it Poison Oak), and stands there in the autumn triumphant and menacing with its crown of blood-red leaves and upas breath, until some knight of the axe approaches, and deals it its death-blow.

I have seen but one or two perfect pine groves in my life. By a perfect grove is meant one in which no trace whatever of man is to be found, unless it be a few dead limbs removed from the trunks or picked up from the ground and a rustic seat constructed around one or more of the trees. A single piece of newspaper would be a blemish, reminding you unpleasantly of Yahoo picnic grounds or of the venality, cowardice, and brutality of the daily press, which has got to be the common sewer of mankind instead of its educator and the conservator of its morals and liberties. If groves are God's first temples, nothing could be so foreign to the atmosphere of the place as a litter of daily newspapers. There is a taint of the charnel-house about those devil's napkins. With the austere purity and solemn-sweet music of the pines they make an unpleasant discord, and may be taken up with tongs and cast

into the laystall or cesspool where they belong. We can do without them. The glorious republics of Athens and Florence flourished without a daily press.

Generally speaking, New England can show no such trees as tower along the river bottoms of the Western Middle States. Trees that approach these in size are the English elms,— such as those giants that line the walls of Boston Common, with their strengthy limbs towering up with stubborn buffeting massiveness, limbs thick as spears around the dead Patroclus, their masses of foliage and labyrinthine reticulation of spray leaving not a cubic foot of space unoccupied. They remind one of the sturdy English body, the sinew and verteber of the nation. They stand for the Puritan stock, for that which has made this an *English* nation. The English elm makes a sharp contrast with our American urn-elm, with its large open spaces and thread-like down-swaying stems. The English elm is like the English sparrow; the American tree, like the American bluebird. It was doubtless the moister, fatter soil of Old England that gave the English elms their massiveness and wealth of greenery. Our dryer climate and soil would not have produced them. The English sparrows find these huge castles in the air just right for their nests, their parliaments, domestic quarrels, and flirtations: tree and sparrow were evidently made for each other. There is an unconscious pathos (a reminder of loyal English-heartedness in the planters of them) in these aristocratic

old exiles that appeals strongly to one's historic sympathies. They remind one of Tennyson's stanzas on the yew, in the second canto of "In Memoriam."

The Laird of Dumbiedikes, when on his deathbed, said to his son Jock, "When ye hae naething else to do, ye may be aye sticking in a tree: it will be growing, Jock, when ye're sleeping." Scott was here speaking his own creed, and many is the tree still standing at Abbotsford planted by his hand. He wrote to the Countess Purgstall, "I promise you my oaks will outlast my laurels, and I pique myself more on my compositions for manure than on any other compositions whatever to which I was ever accessory." No occupation better becomes a gentleman than this. What Scottish lord is there in our days who has planted so many thousand trees over the bare hills of his estate as Scott did? It was a nobler thing of Frederick Tudor to plant ten thousand trees in our little sea town of Nahant than it is of Gladstone to cut down the trees of Hawarden (though I do not deny the value of judicious thinning and pruning, and know that Gladstone's work is of that character); and such a gift as that of John Bromfield of $10,000 to Newburyport, Mass., for the planting and care of trees in the streets of that city, deserves more applause than the winning of the battle of Sedan. And there was poor old Johnny Appleseed, so nicknamed, of Ohio,—with his lifelong peregrinations as a planter of apple-trees, his old clothes and old horse and his riverside nurseries of young trees.

Old Johnny was not so very daft, after all; and his memory is cherished on hundreds of farms in the West where the trees of his planting are bearing fruit.

It is a nice art to transplant a tree or a shrub. A tree is a rooted animal, thrusting its legs deep into the soil and drawing its nourishment from air and soil both. It has a thousand little mouths opening and shutting in the air and a thousand mouths in its feet. As in the case of the pelagic hydroid, or co-operative colony, to different members of a tree different functions are assigned; but you cannot amputate or bruise any part of the delicate organism without injury to the whole. What is needed in transplanting a tree is patience, and again patience. Properly, only a middle-aged man can plant a tree: he alone, as a general thing, can have acquired the restraining touch and the loving care requisite to success. Ha, there! be careful what you do: don't break off that long-running root! Follow it up, tenderly, slowly: loosen the earth in advance with a spading-fork or trowel. Don't begrudge the time. You can no more expect your plant to show vigorous growth if you break off its feet than your son to make nothing of having one foot of his right leg and several toes of his left chopped off, together with one or two fingers of his left hand, and at the same time to suffer deep wounds in other parts of his body. I have a friend who transplanted a Virginia creeper with such care in following up the roots that it ran up to the eaves of his two-story house the first year. The vine scarcely felt

the change. And anybody can do this if he chooses.

I notice that Virgil says (Georgics, ii. 268) of the husbandmen in his day that in planting cuttings taken from their trees "they mark the aspect [point of the compass, *cæli regionem*] on the bark, that every slip may stand the same way, that it may still have the same position with regard to south and north; such is the force of custom in tender years."

A still more delicate art — the poetry of horticulture — is grafting. The beginner generally makes the mistake of not leaving enough of the old branch on to carry on the growth of the tree, a safety-valve for the sap. A man who does not love the smell of the grafting wax and is not as proud of his first successful operation as Shallow was of that last year's pippin of his own "graffing" is one the cut of whose jib is not like mine. Scion grafting and budding were practised much earlier than the time of Virgil. In his Georgics I find the following pretty passage on cleft grafting: —

> Or, again, the unknotty stocks are cut, and a way is made into the solid wood with wedges, and then scions are put in; and in no long time the vast tree rises up to heaven with happy branches, and wonders at the new leaves, and fruit not its own.

Virgil, however, is said to have been an ignoramus in grafting, as in so many other agricultural matters. He was too indolent to find out what the best scientific farmers of his own day knew, little as that was. He speaks of grafting the nut-tree on the arbutus, the cherry

on the elm, and the apple on the plane, or sycamore!

> The rugged arbute is ingrafted with the offspring of the walnut-tree, and barren planes have borne strong apple-trees; chestnut-trees have borne beeches, and the mountain ash has been hoary with the white blossoms of pears, and the swine have crunched acorns under elms. (Georgics, ii. 69.)

Just before he speaks of the stony cherry-tree reddened with plums, *prunis lapidosa rubescere corna*. Now in this he is followed by Columella, who in his book De Arboribus (quoted by Martyn) gives an elaborate and minute description of the grafting of an olive scion onto a fig stock by bending down the scion and uniting it (while still attached to the parent stem) to the fig stock, as in cleft grafting. He closes with saying, "By this method every kind of scion is engrafted on any tree." And Pliny the Elder in his Natural History, xvii. 24, says he saw a tree that had been grafted in various ways so as to bear nuts, berries, grapes, pears, figs, pomegranates, and apples. The tree was, however, very short-lived. It is thought that Pliny's many-fruited tree must have been a case of the mock-grafting, still shown as a curiosity in some parts of Italy and called *greffe-Diane*. It consists in splitting the trunk of the orange-tree, and then inserting slips of various trees, which throw out blossoms and mature fruit (for one season, I suppose). As for the graftings of Virgil and Columella, they have been tried repeatedly both in England and Italy, in modern times, and failed utterly. Either, then, we have lost some trick of the ancients (which seems scarcely

possible, for Columella gives every detail) or we must conclude that both Columella and Virgil were guyed by practical grafters, and merely repeated what had been told them. It is possible, however, that they are describing the mock-grafting process. The Elder Pliny describes ordinary cleft grafting in precisely the same terms that would be used to-day (*loco cit.*), and gives an extended and elaborate résumé of the whole subject, showing that the Romans took a great deal more pains with their grafting than we do, and had experimented with most anxious care. But poets are apt to be weak in science. Pliny says cleft grafting was discovered by accident by a peasant who thrust some sharpened palisades (which he had cut to surround his house with) down into a clump of growing ivy-tree; and the two grew together, "the stock of the tree acting in place of earth." Our familiar device of grafting the pear onto the quince is also described by Pliny, who says it was first done by Appius, a member of the Claudian family. At least, his "Scandian fruit" is interpreted to mean pear by the best editors.

Homer, in the twenty-fourth book of the Odyssey, describes old Laertes as loosening the earth about a tree, gloved, wearing an old patched tunic, leathern greaves, and a goat-skin cap. Ulysses notices that his father's fig, olive, and pear trees and his grape-vines have all been well pruned and otherwise cared for; but he says nothing about grafting, and we have no proof that it was known so early. The great fellow in those days was the *topiarius*, or fancy gar-

dener, who cut your box and evergreens and deciduous shrubs into figures of animals (bears, boars, peacocks, etc.), and sometimes formed the letters of the owner's name, as described by the Younger Pliny in the sixth epistle of his fifth book. (Pliny belonged to the upper ten of those days, was a good fellow, popular and wealthy, who gives you the impression of being rather ridden by his wealth, and not over-endowed with original intellectual power, decidedly given to bragging of all his good things, especially his four noble villas in different parts of Italy, all of Vanderbilt proportions, with innumerable sunny rooms, baths, fountains, furnaces, flower and vegetable gardens, and stables, requiring "a mint of money" to keep up, and a host of slaves and other servants to scrub and scour.)

A tree in winter is in a state of hibernation, like the woodchuck in his den under the stone wall. That the tree is alive is visibly shown by the strange shrinking of its fibres in a cold snap. From the window of my study I look out on a hickory-tree which every winter opens up a fifteen-foot-long cleft, fully two inches wide. It gives you a curious uncanny feeling to see so hideous a gash,—as if one of Nature's moulds were cracked and her germens spilled. The tree seems to shrivel under the hug of the frost. It opens its mouth in horror at the glance of the Gorgon, Cold, but, like a man in a dream, can utter no sound. If Ariel should creep into this cleft for a nap, with the coming of the first warm spell he would find himself pegged in its

knotty entrails for a longer sleep than he bargained for. In the spring and summer of course, as well as on warm winter days, the cleft wholly closes up. But it goes slowly to work. The temperature must have been twenty or thirty degrees above zero for a couple of weeks before Nature has very slowly and cautiously, so as not to strain or break the fibres, got the lips of the great mock-wound pulled together again. But not sewed. She can't do that unless the two green cambium layers touch, and give her knitting-needles and life-threads a chance to work.

Why can't man hibernate as well as the trees and animals? At any rate, get sleep and plenty of it in winter, that you may cast your old skin in the spring, and come out fresh and strong with the new year. Then in summer lie fallow again, only absorbing material passively in hot weather, and storing up energy for an exhilarating dash through the blue and frosty horizons of the autumn, — one after another, like a gymnast through his hoops, eyes sparkling fire, the horse you ride your own brave spirit, and ambition your spur.

An axe for the hand of man, and a needle for the hand of woman. A woman is as much unsexed in wielding an axe as a man is in plying a needle. Brave thoughts come with the music of the flying chips. A tingling vigor steals up through the axe handle, and toughens the fibres of body and brain. There is no oil like hickory oil for the palms. And let me whisper here a chopper's secret: You will never split that knot by striking it on one side. Sink the

blade into the centre of the knot, and you will find a plane of cleavage that will lay open the white heart of the mystery. All of which contains a pretty moral folded up in it.

One summer an August gale snapped square off the perfectly sound, foot-thick top of one of our large hickories. While the storm was still high, I donned old clothes, and mounted the tree, axe in hand, to clear away the wreck, lest the whole trunk might be split up. The work was a bit perilous, as the tree was straining and cracking ominously, and a single slip or misdirected blow would have had ugly consequences. When the top had been freed, there still remained the hard task of getting the whole entangled mass free of the boughs and down to the ground, and of sawing off even and painting the mutilated trunk. I went to bed that night with one eye nearly blinded with sawdust and whole body aching and covered with bruises. It was only after two days' hard work, at odd times, that I at length got all the lopped limbage and branchery on the ground, and stood victorious in the tree with one arm around a cool tentacle of the giant old air-polyp. The just perceptible swaying of trunk and limbs (the sun now shining and the breeze blowing) imparted a feeling of strength to the muscles, as in riding a glossy spirited horse.

If you want to measure yourself against nature, with the unused muscles of years of sedentary work, just undertake to master a hickory-tree, that's all. A combat with a devil-fish or a sea-serpent can't be much worse. You will

right soon discover what a poor pygmy man is. And the splendid exercise will start original trains of thought, — how the air-envelope of the globe is ever oxygenated and refreshed by the vegetation, and the vegetation supported by the carbon of the air; what subtle affinities, in the steady feud of want and have in the æons gone, gave the present varieties of tree-fibres the advantage in the rush to be, so that we have now such far separated types as the hickory-tree (with the heart of adamant and the hide of an alligator) and the wind flower of spring; and, finally, what a beautiful thing it is that a tree never freezes in winter nor grows hot in summer, but maintains its own steady temperature,[1] so that even a forest of deciduous trees, just by virtue of its living wood-fibre, must actually warm the air around it in winter as we constantly realize it cools it in summer.

How deliciously cool a tree-trunk is on a hot day! A great forest holds enmeshed and hidden in its masses of twig and leaf ten thousand fountains spraying the air with silver-cool liquid. All the spring and summer long, with no charge for water rates, beginning early, as soon as the chief engineer Heat turns on the liquid, this quiet and hidden play of leaf fountains, or tree-geysers, is going on. A man's intelligence is measured to me by the amount of veneration he has for a tree. Nothing on earth so proves a man a donkey as his needless slaughter of one of these benefactors of the race.

[1] Meguscher discovered that the constant mean temperature of a tree is 54° Fahr.

While chopping at my hickory, I found it necessary occasionally to use the left hand. It occurred to me that I had often been ashamed of that weak and little used left arm hanging by my side. I resolved to better it, as Goethe practised looking from a dizzy height in order to conquer his weakness in that respect. For this purpose I extemporized an outdoor gymnasium out of a low-hanging limb of what was left of the hickory (it has since grown a new head, and is doing well). This amiable, easy-going limb allowed all sorts of liberties to be taken with it without a squeak or a growl of reproach. Twisting a live lion's tail has an element of danger in it, but you can perform the flying trapeze on a hickory-tree's proboscis with impunity. I regret to say, however, that I thoroughly lamed my left arm by too severe use of it at first, and that I consequently let my fine resolution pretty well sink out of sight and memory. But I believe it is true that the trunk and brain would be more symmetrically developed if we were ambidextrous. For prudential reasons alone, in case of the loss of an arm, children should be taught, either in the schools or at home, to be ambidextrous. I know of a young man, now twenty years old, whose father is left-handed. As a baby, the son began to use his left hand. When sixteen, he used both equally well, and had to stop to think which hand was which. He finds it a benefit to be ambidextrous, as one arm never gets more tired than the other.

X.

BY FOUNTAIN AND STREAM.

"Fountains that frisk, and sprinkle
The moss they over-spill."

ONE can well believe in the fountain of Dante's vision that restored to whomsoever drank of it the memory of every good deed he or she had ever done. All springs, but especially the warm and medicinal ones, are true breasts of the earth-mother for her children. When the Anglo-Saxon race learn to love beauty as they do dollars and sovereigns, they will carve marble basins for their springs, and fence them, and set them about with trees and flowers. At present it is a miracle to find one in the country that is not surrounded by an ugly mess of mud and rubbish, with perhaps a rude cattle-trough, all askew, thrust down contemptuously, but no sign of a cup to drink from or any noble reverence manifested for the gift of the gods. To show the rest of the world how *not* to reverence anything in heaven or earth seems, as Ruskin says, to be the special mission of the Americans on the earth. That a fountain or well is the very source of life to man we realize perhaps most vividly when we see one choked up, defiled, or in entire disuse.

It gives one a dismal feeling of death and desolation. There is a wooded lawn in the town of Milton, Mass., however, where a disused well has been turned into a romantic ornament, and life of another kind given to it for the death of its waters. For to the summit of the high old-fashioned well-sweep climbs a vine rich with foliage, and the curb is entirely concealed and smothered by other vines.

Of course extreme coldness in a spring is due not only to the dense shade over it, but to the depth from which the water comes. The greatest surprise I ever had in this respect was experienced in a wooded tableland of the Alleghany Mountains, somewhere near the summer resort kept by a brother of the arctic explorer, Kane. I passed there a densely shaded stream of water (fed by mountain springs) so cold that, although the stream was really a rapid flowing small river, twenty or thirty feet wide and two or three feet deep, it made one's legs ache to stand in it; and to bathe in it for more than a moment or so in mid-August would have been dangerous.

The Younger Pliny, describing his elegant Tuscan villa, up among the hills, some one hundred and fifty miles from Rome, gives us the best idea of the way the Romans and Greeks cooled the air of their gardens and academies with fountains. Pliny gives a detailed painting of a great pleasance, almost like the mazes of the old landscape gardeners, so numerous were its winding rose-bordered walks, shady copses, and alleys bordered by box; and the negligent

beauties of wild nature were mingled with the formal clippings familiar to us in the modern Italian garden. At the upper end of this open sunny pleasance," says Pliny, "is an alcove of white marble, shaded with vines and supported by four small Carystian columns. From this semicircular couch the water, gushing up through several little pipes as though pressed out by the weight of the persons who recline themselves upon it, falls into a stone cistern underneath, from which it is received into a fine polished marble basin, so skilfully contrived that it is always full without ever overflowing. When I sup here, this basin serves as a table, the larger sort of dishes being placed around the margin, while the smaller ones swim about in the form of ships and waterfowl." Opposite this was a fountain which was incessantly filling and emptying, the water thrown to a great height, falling back into it, and returning to its source to again be hurled upward. Near by was a summer-house made of beautiful marble. Next to this was a little room, furnished with a couch and provided with windows on every side, yet enjoying a cool gloom from the vines that clambered over it on every side. "Here you may lie and fancy yourself in a wood, with this only difference, that you are not exposed to the weather as you would be there. Here, too, a fountain rises and instantly disappears. Several marble seats are set in different places, which are as pleasant as the summer-house itself after one is tired out with walking. Near each seat is a little fountain, and throughout the whole

pleasance[1] several small rills run murmuring along through pipes, wherever the hand of art has thought proper to conduct them, watering here and there different plots of green, and sometimes all parts at once."

To get an exact idea of such an ancient estate as this of Pliny's, one has but to visit the grand old Villa d' Este at Tivoli, with its hundred tinkling fountains, mossy statues, immense trees, and verdurous mazy walks. The Borghese Villa at Rome used to be typical of the old classic style, but is much injured now by being turned into a cheap show-place, and deformed by trams and shams for the amusement of the people.

Tennyson generally surpasses the old Greeks and Romans in the delicacy and richness of his nature imagery. All that Horace can say of his "fons Bandusiæ" is that it is *splendidior vitro*, "shining brighter than glass," a tame image; but Tennyson describes sunlight as glancing upon the surface of water

> "In many a shiver'd lance
> That breaks about the dappled pool."

The lines of the English poet are unbetterable: the flashing of light on water has at last got into words. The whole section in which this is found (XLVIII.) is a delicate study of crisped, and "tender-pencilled" water. Tennyson delights in the sound of running water and the splashing of fountains. It is easy to recall the

[1] Pliny calls it the *hippodromus*, but this is thought to be only his name for a portion of his grounds; and I have accordingly translated by *pleasance*.

babbling runnel of "Claribel"; the silver-chiming fountain of Haroun's garden and its "diamond rillets musical," the "many-fountained Ida"; the countless streams and plunging cataracts of "The Lotos Eaters"; the torrent brooks, falling from craggy hollows and sounding all night long as they fall through the dell in the "Dream of Fair Women"; the rivulet flowing, softly flowing, by lawn and lea ("A Farewell"); the tinkling rivulet where "in mosses mixt with violets" the cream-white mule of Guinevere his pastern set; "The Brook" babbling on forever over shingly bars and cresses, past fairy forelands on to the sea; the fountain "showering wide sleet of diamond drift and pearly hail" in "The Vision of Sin." Indeed, it would be hard to find a landscape poem of Tennyson's earlier work in which running water is not introduced. Is he addressing lines to a friend on his travels in Greece, he begins with

> "Illyrian woodlands, echoing falls
> Of water, sheets of summer glass,"

and says that, as he followed him in his book of travels,

> "For me the torrent ever pour'd
> And glisten'd — here and there alone
> The broad-limb'd gods at random thrown
> By fountain urns; — and naiads oar'd
>
> "A glimmering shoulder under gloom
> Of cavern pillars; on the swell
> The silver lily heaved and fell."

"The Princess" is full of the sound of splashing water,— "the steep up-spout" (in the Prologue) "whereon the gilded ball danced like a

wisp"; in the many-gardened streets of Ida's college domain

> "The splash and stir
> Of fountains spouted up and showering down
> In meshes of the jasmine and the rose";

the wild cataract that "leaps in glory"; and the cataract visited in the ill-fated ride; —

> "And up we came to where the river sloped
> To plunge in cataract, shattering on black blocks
> A breath of thunder."

(That last superhuman touch puts Tennyson abreast of Shakspere.)

In the matter under consideration, "In Memoriam" is no exception: everywhere the imagery of water appears, from the sweet after-showers of evening shadowing down the flood in ripples to the sliding of the blue brine of the sea beneath the keel that brought him home his dead. In the "Idyls of the King" and in the later poems, which deal less with landscape, this passion is subordinated, though we see in the very opening lines of "Gareth and Lynette" the hero "in a showerful spring" staring at the spate, or flood, and the cloth of gold "shone far off, dazzling, as shines a field of charlock [wild mustard, golden in color] in the sudden sun between two showers"; and through "Lancelot and Elaine" winds the river that carries down the lily maid of Astolat to Arthur's court.

Tennyson seemed to find in the melody of flowing water the music that awakened and harmonized best with the melody latent in his own soul. So some one has said of Theocritus that none of his pictures seem complete without the

presence of running water, whether the wells that the maidenhair fringed or the bubbling runnel of the fountain of the nereids where the merles poured forth their honey-sweet song and the brown nightingales replied. Or he may sing of the sweet streams of Crathon or Himeras, or the water falling from the face of the high rock green with laurels and myrtles. Here is one of his fountain pictures, for instance: Two shepherds are reclining on deep beds of fragrant lentisk leaves (resinous and evergreen) in a sylvan spot. "And high above our heads waved many a poplar, many an elm-tree, while close at hand the sacred water from the nymphs' own cave welled forth with murmurs musical." On shadowy boughs the burnt cicalas sang, the ring-dove moaned far off, "and the yellow bees were flitting round the springs." It is only in such a place as Sorrento, and about there, in Italy, that we may to-day see just such scenes as Theocritus sang, says Symonds,—"huge fig-trees leaning their weight of leaves and purple fruit upon the cottage walls," and the "stone walls and little wells in the cottage garden green with immemorial moss and ferns, and fragrant with gadding violets that ripple down their sides and checker them with blue."

Spenser's enchanted forests are full of fountains. The Redcrosse Knight stops to cool his brow in a shady wood beside a spring "whose bubbling wave did ever freshly well"; while his horse cropped the fresh grass, the wind full gently played, and sweet birds sang in the green boughs that circled the fountain. Spenser does

not name it; but we may call it the Fountain of Idleness, for the nymph that dwelt in it fell out of favor with Diana, because one day, tired from the chase, she sat down too long to rest by its side. The goddess thereupon bade the waters ever after to make faint and feeble whoever should drink of it. And so, when the knight,

> "Lying downe upon the sandie graile,
> Dronke of the streame as cleare as christall glas,
> Eftsoones his manly forces gan to fayle."

(What a pretty word is that *graile!* — from *gracilis*, fine, slender; our word *gravel.*)

Then Spenser limns what we may call The Fountain of the Bathing Damsels. The water flows from a structure carved in material so translucent that the cool element "through every channel running one might see." It is overwrought with shapes of naked boys and ivy of beaten gold colored green, and all the margent round about is set with shady laurel-trees which admit to the refreshing gloom within only stray shafts of light that dapple here and there the translucent water and the white bodies of the merry bathers.

A little farther on, in the Bower of Acrasia, Sir Guyon and his companion hear the sound of falling water mingled in ravishing melody with other sounds: —

> "Birdes, voices, instruments, windes, waters, all agree;
> The joyous birdes, shrouded in chearefull shade,
> Their notes unto the voice attempred sweet;
> Th' Angelicall soft trembling voices made
> To th' instruments divine respondence meet;

The silver sounding instruments did meet
With the base murmure of the waters fall;
The waters fall with difference discreet,
Now soft, now loud, unto the wind did call;
The gentle warbling wind low answerèd to all."

In Book III., describing an open glade, Spenser sings thus of its stream: nothing could be prettier: —

"And in the midst a little river plaide
Emongst the pumy stones which seemed to plaine
With gentle murmure that his cours they did restraine."

Wordsworth's poetry is everywhere vitalized and freshened with the murmur of the streams and the thunder of the waterfalls of his mountain haunts. In the deep vales about his home, padded with softest turf to their summits, one continually hears the sound of falling water, "and, when the ear cannot hear them, the eye can see the streaks or patches of white foam down the green declivities." Wordsworth's passion for living water matches Tennyson's: —

"I love the brooks which down their channels fret."

"The sounding cataract
Haunted me like a passion."

"For fondly I pursued,
Even when a child, the streams, — unheard, unseen;
Through tangled woods, impending rocks between;
Or, free as air, with flying inquest viewed
The sullen reservoirs whence their bold brood,
Pure as the morning, fretful, boisterous, keen,
Green as the salt-sea billows, white and green,
Poured down the hills, a choral multitude!"

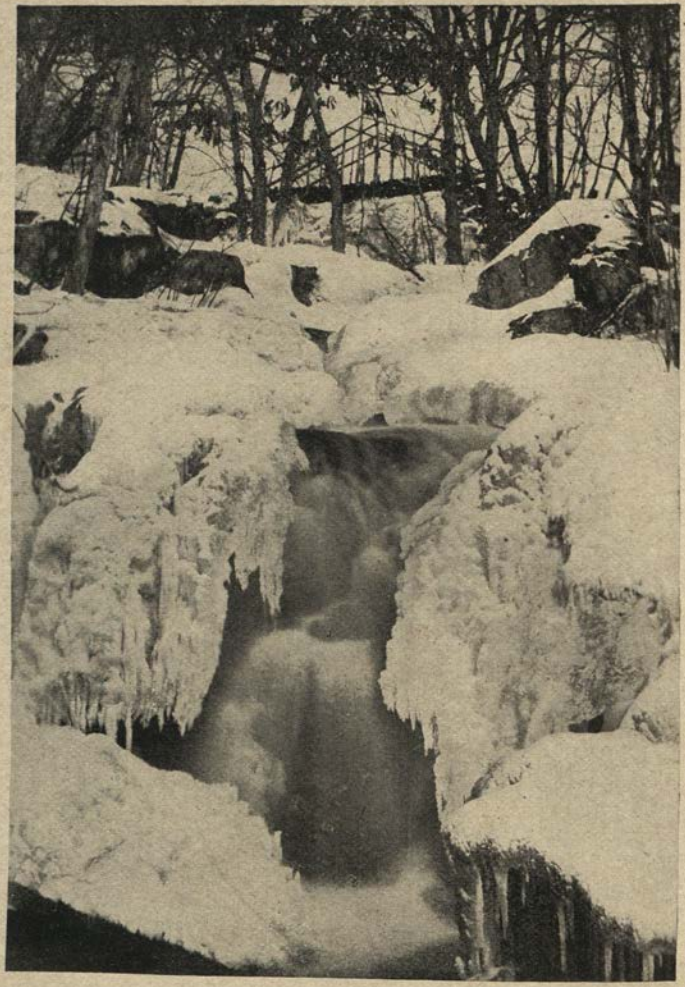
He often speaks of day-dreams beside the murmuring purling streams, when "beauty — born of murmuring sound" — passed into the face.

Everywhere incidental touches about running water; rivulets "gurgling in foamy water-break" or "loitering in glassy pool"; the sparkling foam of "fairy water-breaks" murmuring on forever; "waters rolling from their mountain springs with a sweet inland murmur"; the "torrents shooting from the clear-blue sky"; in the Simplon "the sick sight and giddy prospect of the raving stream"; and "cataracts blowing their trumpets from the steep." In such poems as "The Fountain" and in "Yarrow Revisited" the preacher dominates the pagan and pantheist, as in Whittier. But then, in all great poetry, landscape is but the setting, the framework, of the central theme,—man and eternity. So it detracts not a whit from the beauty of the following lines as a perfect picture of a scene in nature that they precede a thought on human life. They were written in Grasmere after a storm:—

"Loud is the vale! the voice is up
With which she speaks when storms are gone;
A mighty unison of streams!
Of all her voices one!

"Loud is the vale! this inland depth
In peace is roaring like the sea;
Yon star upon the mountain-top
Is listening quietly."

But no one of the greater bards equals the prose-poet Thoreau for minute study of the phenomena of water, crystallized or fluent. Our American painters (the few great ones) will in time find his works, especially the four volumes of his journals, an exhaustive store-



WATERFALL IN WINTER.

house of observations on such things as the tints of shadows on snow, the iridescence of ice-crystals, the rich colors of a field of ice as a mirror reflecting the green and amber of sunset, the facts about mists, and a hundred other subtle phases (winter or summer) of river and lake, — so subtle that few painters of landscape have ever suspected half of them. Ruskin's "Modern Painters" and Turner's works contain such studies, but I know not where else you will look for them in art.

A spring is the emblem of joy and peace, a waterfall the symbol of resistless strength. The leaping water is like a wild beast unleashed, exulting in its new-found power, bounding from rock to rock, nervous, savage, and free.

To see such a fall as the Caterskill, at its best, approach it from below through the steep mossy gorge leading up from the clove: the sky line then meets the water line, and you get the rich color-chord of blue sky, water, foam, and cloud. To secure this effect, stand as near the fall as possible, and look up. I learned this at the Falls of Minnehaha. The water seems to be tumbling out of the sky, falling in wind-swayed plumes of snow or drifted snow-dust, blown into down-pointing wedges edged with silver, and shattered into creamy lace upon the rocks below. At the Caterskill from the curving background of rock spring bright wood flowers sprinkled with perpetual moisture from the fall.

One can think of nothing in nature to compare with Niagara, unless it be the colossal mountain ranges of cumulus clouds in a summer sky here in the New World. Eternity and Power are Niagara's word. It baffles, stuns, crushes. It is a majestic mentor, a mute summons: beware how any littleness appears in you; let every atom of your physical and mental might weigh now, if you would not be jeered at by your own self. In the calendar of this giant of the ages it is but a few days or minutes since the ephemeral manikins who call themselves the lords of creation began to creep frightened about it. The only organic being that would not make a discord in the sights and sounds of Niagara would be a really noble Red Indian with his bow and arrows, and undefiled by the least touch of "civilization,"—a Hiawatha or Red Jacket, say. And the only poets who can be read at all in the face of this stupendous scene are Walt Whitman (in his chants of death and the sea) and Dante Alighieri. The majestic spirit of Niagara is in Whitman's

"Rise, O days, from your fathomless deeps, till you loftier, fiercer sweep,"

and in "Patrolling Barnegat," but not in any poems of Shakspere, Longfellow, Emerson, Tennyson, Whittier, Bryant, unless it be "Thanatopsis" and a few passages from Shakspere's greatest dramas, and the sublime portions of Emerson's "Song of Nature," "Woodnotes," "May Day," and "Initial, Dæmonic, and Celestial Love." It is a bitter and a terrible test

to read poetry in the face of Niagara. As for Dante, there is that in the crushing (*zermalmend*) power of the shattered water, and the endless smoke of its torment ascending up, that reminds you of the Titanic scenery of the circles in the Inferno. Those swift up-darting wraiths that ever rise, like gray-haired Graiai, out of the smoke of the abyss, — they would not have been too sublime for Dante's imagination.

Stand directly under and a little to one side of the American side of the fall. The roar is like nothing else in nature except continuous cracking peals of thunder or the noise of a city or a forest on fire. The confusion and mix are indescribable, huge volumes of water-smoke struggling ever upward and as continually beaten down again by the awful weight of the descending mass. Steam up into the middle of the Horseshoe Fall between those high walls of azure and snow. If you stand alone in the bow, you seem to become strangely merged for a moment with Nature herself; or it is as if you were sailing amid icebergs in an arctic region. Then in a moment the ship turns and speeds back through the boiling maelstrom.

A long drought brings home to us upon how delicate a mechanism we are dependent for the rain, — how easily it gets out of gear and comes to a dead stop. At such a time I always find myself wondering, not why it doesn't rain, but how it manages to rain at all, how it is that the rain-buckets keep going up and down, up and down forever, — forgetting that the sun is the

ceaseless engine and his rays the rods that keep the wheels turning, if not here, then somewhere else. Our wonder at the miracle of the rain is partly based on our consciousness of helplessness to draw one drop from the clouds; that is, under ordinary circumstances. A battle may cause rain, and dynamite balloons seem in a few instances to have done so. If it should turn out that man *can* cause a downpour from the clouds, Hugo's Gilliatt battling with the sea and the wind would be a pygmy in comparison with a rain-maker. What would Solomon's cimeter or Thor's hammer be to the rain-bomb? Habib's feats in passing through the seven enchanted seas would be child's play matched against a mastery over the clouds. It would make Ben Franklin's laurels (*cœlo eripuit fulmen*, etc.) fade at last.

Mighty useful in war would be man's control of the cloud sluices. If you wanted to dampen the ardor of the enemy, make them lower their tail feathers, just pull the cloud plug, — put the hose on 'em. If it would serve your purpose to retreat, then send out your uhlans or scouts to pull the latch-strings again, and by a cloud-burst make the rivers impassable behind you. The same device would enable you to ruin your enemies' crops, if such a lamentable thing had to be done.

At present, however, we sit in our doorways, and patiently wait for the blessed spring or summer rain to descend in its own good time. And, when it has come and gone, what peace and joy it leaves behind it, — the fruitful sum-

mer shower! I recorded one such in the middle of May. All the fever and fret washed away from the landscape and from men's lives, — the choking dust, the bad odors of the streets, the noxious débris of the great cities and towns, swept away by the cleansing fluid; all the high sparkling lights of the landscape, its smoke, its winking heats, dissolved (so it seemed), leaving to the sky a cool, washed-out steel-blue look, as the clouds passed out to sea in the quiet-colored evening, and giving to the green spread of the curving globe a deeper green, free from the least impurity. All noises, too (it being Sunday evening), were gone, the rattle and shriek and whistle gone. Even the birds had lost their songs, and preened their wet feathers in silence in the trees, and cooed and twittered softly to each other, as if afraid to break the charm of silence. The change from the hot days that had just preceded was like the change in a man awaking from fever and a wandering mind to the peace of perfect sanity.

The most beautiful lines on the rain have been written by the prophet-bard of Manahatta in his "Voice of the Rain": —

"Eternal, I rise impalpable out of the land and the bottomless sea
Upward to heaven, whence, vaguely formed, altogether changed, and yet the same,
I descend to lave the droughts, atomies, dust-layers of the globe,
And all that in them without me were seeds only, latent, unborn;
And forever, by day and night, I give back life to my own origin, and make pure and beautify it."

The whole poem, with its thought of a good or strong action coming back to bless the actor, will bear deep pondering. It suggests that, after all, as the husky-voiced mother, the sea, is our progenitor, so we are still but a kind of fish on land, we and the plants and all; for not a tree or flower or animal could exist without copious showers of tears from the sea, and, in running back our pedigree to the monad, we pass through, not only hairy savages of very fishy antecedents, but also through actual fish species that gradually learned to use one set of flippers for walking and another for arms. And the tears which the sea-mother still sheds for her runaways old Adam Earth cunningly uses, not only to nourish said runaways, but to help beget shapes of life forever and forever new.

APPENDIX.

BIRD SONGS AND CALLS.

"Often certain words or syllables which have suggested themselves remind one better of a bird's strain than the most elaborate and closest imitation." — *Thoreau*, "Summer."

"Oft didst thou search the woods in vain
To find what bird had piped the strain:
Seek not, and the little eremite
Flies gayly forth and sings in sight."
— *Emerson*, "Woodnotes."

We have, in book form, the birds' songs set down in musical notation by the late Mr. S. P. Cheney, and, if whistled or played on the piccolo or flute, these give a tolerably good idea of bird music. Phonographic cylinder records would be better still. Burroughs says that the language of *all* birds "is easily translatable into the human tongue." However that may be, it is certain that phonetic equivalents of their pretty baby prattlings are of great help to beginners. The books are all very deficient in this matter. I give below a list of verbal imitations or catchwords of songs, mostly pencilled down by me in the field as the birds sang them. But they will not apply accurately to all birds of the same species, because birds are great improvisers, no two singing exactly alike. The practised field student of the songsters identifies his hidden bird more often by the *timbre*, or quality, of the tone, and by the inflections, than in any other way. It

should be remembered, in using the following list, that *ch* is always to be pronounced as in *child.*

BALTIMORE ORIOLE. *Take care, take care, quick;* or *there, there, there, there, there;* or *dear, dear, dear, dear, dear;* or *chippy, chippy, too-too;* or *cheer-cheery, cheer-*CHEER-*up;* also *cherry, cherry, sweet,—ke-cherry;* or *cherry, cherry, sweet cherry;* or *churry, churry, chŭ-*PEEP-*up, pee-up′, pee-up′,* etc. Besides their scolding talk and squealings, the Baltimores keep up a busy soliloquizing chat while feeding their young amid the trees,—a contented *pee-peep, cuh-cuh-cuh,* the young answering with *why-yit, why-yit,* and all sorts of soft cooings.

BLUEBIRD. Something like a warbled *cheer-ke-cheery, keer-keery, why don't you keep it up?*

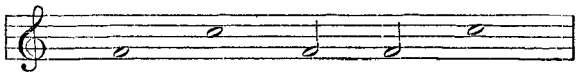
BOBOLINK. For notes from the "glassichord" of fifteen bobolinks see Chapter III., near end. That pretty word is Thoreau's. I am glad to find (since writing the text in the body of the book) in his "Summer" a fit appreciation of the bobolink. "Such strains," he says, "as never fell on mortal ears, to hear which we should rush to our doors and contribute all that we possess and are" (p. 9).

BLACKBIRD. See p. 34. Some one speaks of the blackbird's "split-whistle." The phrase can't be bettered.

BLACK-THROATED BLUE WARBLER. A lazy, husky *zwee, zwee;* sometimes a shatter of twittering notes.

BLACK AND WHITE CREEPER. No two sing alike, but they all say something like this that one sang to me: *busy busy busy busy, busy busy biz.,* which is very appropriate, as no bird devotes himself or herself more assiduously to "biz." Sometimes they have, also, in spring a vigorous and prolonged song, quite astonishing because unexpected.

BLACK-THROATED GREEN WARBLER. See p. 49. Ordinarily, two songs: a five-noted, cheery *pee pee-pee* TWEE, *twee* (the first three notes rapidly uttered, the fourth blown as if from a clear-sweet fairy flute); and a four-noted variation in a much lower and husky tone and with just a touch of the familiar sweet emphasis on the third instead of the fourth note. (This subdued song must not be confounded with the four lazy *zwee's* of the golden-winged warbler.) A friend called my attention to a number of black-throats whose five-note song, as I often hear it, is as follows. The books do not notice this variety.



BLUE JAY. See pp. 186–189.

BLUE-WINGED WARBLER. *Wee, chĭ chĭ chĭ, chur* CHEE *chur.*

CANADA JAY. A loud, almost screaming whistle, resembling that of robin and blue jay both. One of its notes was *pee-up', pip, pip.*[1]

CEDAR BIRD. See p. 58.

CHAT (YELLOW-BREASTED). I listened in Swampscott several times to the unique human-like whistlings of this eccentric bird, which is very rare in Eastern Massachusetts. You are now reminded of the tones of the veery or the great-crested flycatcher and now of a rapidly struck small mellow bell; a whistled *whĕ-o, whĕ-o,* and *whee-oi* (Burroughs's *who* and *teaboy*) describe the separate sounds very well. The voice is loud and strong.

[1] Seen and heard by me May 12, '96, at Arlington Heights, Mass., moving high up amid pine-trees and hard-wood forest. Observed him pretty close at hand with glass for some minutes, and wrote in my field book, "Dark drab head, long straight black bill, dark back, white-gray belly." This is the fourth recorded occurrence of the bird in Eastern Massachusetts (see Brewster's Minot, p. 474).

The bird is apt to begin with five *whĕ-o's*, or dog-call whistles (very pretty), then give two or three *tuts* or *chuts* and *pips* (robin-like). I also heard the hoarse chuckle of the crow and a *pee-uh* like the jay's.

CHESTNUT-SIDED WARBLER. *Chee-chee-chee, chĕ* WEE-*chĭ;* or *veryveryveryglad to* MEET *you;* or *see-see-see-see the* BREECH-*es* (call him "Little Breeches"). Sometimes he is rather closely imitated by the yellow warblers.

CHEWI'NK (TOWHEE). (1) *Twĭ-hu,— he, he, he, he, he* (the *he* standing for a whistle, like the song sparrow's final trill). (2) *Tip-er-r-r chee'*. Both strains uttered vigorously and joyously. My birds say *tĕ-wee'* also (whence "towhee," wrongly pronounced by the dictionaries with the stress on the first syllable), and *chewi'nk*. The female towhee is a quiet demure little Quaker body, with the neatest of drab bonnets and wimplers, cinnamon dress and white apron. No wonder the males are joyous fellows with such Dame Durdens of wives.

CHICKADEE. Besides their *phe-be* and *chic-a-dee*, or *day, day, day*, notes and various little bits of conversation, their favorite remark is *h'yee'-pŭrty,*— less often *h'yee-pur*, though the books (Minot, *e. g.*) wrongly get it as being always two-syllabled.

COW-BIRD. See p. 46.

CUCKOO. See p. 97.

FIELD SPARROW (or Bush Sparrow, call it). Usually a clear trill (plaintive-sweet) with a rising scale of notes, but occasionally with a falling series. Great variety of song, which generally ends in *de-de-de-de-de.*

FOX SPARROW. Song a cross between the oriole's *cherry sweet* and the *tee-tuh-wuh-teet* of the warbling vireo. It is a plaintive-cheery whistle: *whee-to-to-whee' to, to-wheet'*.

FLICKER. Has four speeches: his *cuh, cuh, cuh, cuh;* the *pee'too, pee'too, pee'too, pee'too,* or *flicka, flicka, flicka;* the shrill *kee'-yer* or *peop;* and the *come boy, come boy.*

GREAT-CRESTED FLYCATCHER. I have heard one whose *toot* recalled the quail's first two whistled notes. But the usual sound is more like the toad's *ur-r-r-r;* or say the sound made when we expel air through the relaxed and vibrant lips with a bubbling sound,— the noise often made by fond papas to make the baby laugh. The call of the great-crest is of one syllable or two, and sometimes more.

INDIGO BIRD. See p. 69. Scarcely any two indigo buntings sing exactly alike, though I have heard two, probably of the same clan, with precisely the same notes.

LONG-BILLED MARSH WREN. Begins with one or two silvery-tinkling notes; then an energetic explosion like that of the house wren,— a kind of musical alarm-clock performance, the notes rising to their highest pitch in the middle of the strain, and then dropping off into a pretty little scattering fusillade of tinkles or gurgles, like single drops of water falling into a cistern. The long-bill's scolding note is *tschack, tschack, tschack.*

MARYLAND YELLOW-THROAT. *Pe-peep', pe-peep', pe*-PEEP, *pee*, though Burroughs's *which way, sir?* repeated rapidly from two to five or six times, is nearer to it. Or *beseech, beseech, beseech ye.*

MEADOW LARK. A plaintive, sweet, whistled *here, d'ye* SEE-*e-e?* or *her-r-re, do you see'-e-e* (the *r's* rolled). Often also the form given in the books, *et see'-e-e de uh.*

NASHVILLE WARBLER. I heard one say *pĕ-pee', tŭt-tu, tŭt-tu wit.*

OLIVE-BACKED THRUSH (SWAINSON'S). Begins with the two or three opening notes of the wood-thrush

(in fact, when I first heard it, I thought it was a wood-thrush who had inherited his tune badly or was broken-winded!) and goes on in a broken, characterless way, the song quite brief, and considerably like the veery's, except that the notes rise from lower to higher instead of the contrary, as is the case with the veery. (For an introduction to this bird I am indebted to the courtesy of a friend.)

OVEN-BIRD. Thoreau hits the white when he speaks of "the fresh emphatic note of the oven-bird." As stated in the text, Mr. Burroughs's "teacher, *teacher*, TEACHER, TEACHER, TEACHER, should be amended. The birds do once in a while end with *teacher*, but as a rule *teach* is the final sound. Mr. Torrey tells me that to his ear it is *tee*, but I think I detect something like a *ch* at the close in most cases. All one summer an oven-bird patrolled the lane by my home who *never* ended his song with more than one syllable.

PURPLE FINCH. A warbled *tee-tuh-wuh-tee' uh-wuh tee*, with *tee, tee, tee*, sometimes added. Recalls the rose-breasted grosbeak and the warbling vireo. The female sings as well as the male.

RED-EYED VIREO. Named by me the Parlez-vous Bird. See p. 51. *Qui est? — bien — c'est bien — oui, oui, oui — tout de suite — qu'est-ce que c'est? — je prie vous — pas si vite — s'il vous plaît,* — all pronounced in snappy staccato style. The querulous call of the bird is almost the *chewi'nk* of the towhee.

REDSTART. *Wee, wee, wee, wee; chĭ, chĭ, chĭ,* — a cicada-like, sharp, cutting sound.

ROSE-BREASTED GROSBEAK. He flutes the full round note: *chee-up', chee-uh; chee-up', chee-uh; pee-*WEEP, *pee-ŭh, pee-ŭh* (in the early morning often three or four times as many notes). A wallowing, undulating carol, or continuous warble, of distinguished tone-color, and (fragmentarily heard) something

like the tanager's notes in quality of sound. It is lilted out in the high tree-tops in an aristocratic devil-may-care style, as if by a gay King Charley cavalier with upturned moustachios and hat rakishly aslant. There is an Oriental leisure in the carol of the rose-breast, as if he had once floated over from some "rich ambrosial Eastern isle," his plumage tinted by one of its refulgent sunsets. He is the Saadi of birds, too, for he is "sober on a fund of joy" that seems infinite.

SONG-SPARROW. The two or three sweet and joyous deliberate initial notes ("*maids, maids, maids*") are followed by a trill often ending with a peculiar abrupt pip. Great variety in the songs. I heard one once whose first and second notes sounded like the resonant ring of a tuning-fork or the prolonged ring of a silver rod struck on a solid object, — an exquisite sound. Another said *zip, zip, zip-ee'-e, toor-a-looral, don't speak to me.* Thoreau gives *ozit', ozit', ozit', psa te te te, tete, ter twe ter.*

TANAGER. *Pee-oo', pee-oo'; pee-*ATE, *tu you', pee-oo'.* The note of alarm is *tip-where, tip, tip.* Other birds differ of course from this in details of the song.

VEERY. Four or five couplets in a piercing whistle, beginning in a high key and gradually falling: *whee'-uh, wee'-uh; whee'-uh, wee'-uh, wee'-uh;* sometimes closing with an ascending weird spiral whistle or tremolo, — something like *vee-r-r-hu.* The call is *pee'-ut.* They also say *chee'ury, chee'ury, chee'ury.*

VESPER SPARROW. Four deliberate initial notes, rather plaintive, the third slurred rapidly over; then a hurried though brief trill, the whole delivered many times and with great energy, generally about the time the robin is giving his vesper song, also early in the morning, etc. Some folk find the

"damnèd iteration" of the vesper's song as annoying as the indigo bunting's. *Nil nimis.*

WARBLING VIREO. *Tee, tee' yu' wh' tee,* usually several times repeated and ending with a very emphatic *teet.* It gives one a curious sensation to see and hear, as any one may, the males warbling loud and sweet while sitting on the nest.

WHITE-EYED VIREO. *Chut, wuh, whee, tĭ, tĭ,* TEE' *twut, chĭt mew'.* Another whistled very loud and vehemently *tip-where', tip er chee'.* The scolding of the males is a persistent and harsh *tshew*-ing and *tshach*-ing,— one *tshew* followed by six to fifteen *tshachs,* the whole resembling the scolding of the Baltimore oriole

WHITE-THROATED SPARROW. See p. 44.

WOOD-THRUSH. A flute-like yodel, — *pee-uh-wee' uh, twee,* now in a low key and now in a higher. Alarm note when feeding (as I hear it) is *chuck, chuck, chuck, chuck,* like the sound made by a wheel-and-rope well-curb. The severe classic simplicity and brevity of this bird's song may disappoint at first. But it will be found that its melodious strain echoes in the chambers of the mind for days at a time. After writing the foregoing I read in Thoreau ("Summer," p. 212), "This is the only bird whose note affects me like music, affects the flow and tenor of my thought, my fancy, and imagination." And in "Winter," p. 78, he says of the bird, "The truest and loftiest preacher that I know." "Its strain lifts us up in spite of ourselves." He speaks of "its cool bars of melody"; records (p. 213) that Ralph Waldo Emerson imitated the wood-thrush by "*he willy willy — ha willy willy,— O willy O.*"

WREN (HOUSE). *Chich-chĭ-chĭ-chĭ, uh-whuh-wee'-wuh-wuh,— chich-uh-wuh-wee-wee-wee.* A bubble of song given with great energy and rapidity by this

little neat brown, sweet-voiced stammerer and haunter of old stone fences.

YELLOW-THROATED VIREO. A leisurely *chee*-UP, — CHEE-*up*, — usually the first half with the rising inflection, the last with the falling; often *chŭ*-WIP, — TWEE-*eh* (the "twee" uttered with wondrous cheeriness and energy).

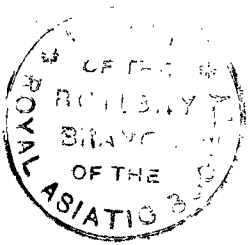
A FINAL WORD ON THE WOLF SPIDERS.

(SEE PAGES 120–123.)

The next season I noticed that by June 5, on the hillside under a cut-leaved birch, a wolf spider, with egg-sac attached to abdomen, had built, as an aërial extension of her subterranean den, a huge cylindrical tube of spider silk and inwoven grass-blades. It was just two inches and a quarter high and three-quarters of an inch in diameter, and looked like an observation tower of glass, almost as insubstantial as Merlin's prison of air. Evidently, this spider is a near cousin of Mrs. Treat's *turricola*, or, more likely, the very same species, — hers building pentagonal towers of sticks, and mine partly angular and partly cylindrical towers of cobweb and grass, with many horizontal cross ribs and bits of bark and rubbish woven in. I caught this Lycosa perched on the top of her aërial tower one fine day, sunning her egg-sac, though her favorite position is down at the mouth of the den. In the case of another specimen, the same season, near by, there was a similar tower; and here the angular form was very noticeable. Curiously, this Lycosa No. 5 (I found after she had abandoned the den) had met with a stone when her tube was only half an inch beneath the surface of the ground; and, as the grass was very high, she remained contented with a house of that

depth, although the usual depth is from four to six inches. These towers, one saw plainly, were the result of the environment, occurring not on the close-shaven lawn, but in the higher grass, and were intended to get the spider nearer to the sunlight with her precious egg-sac.

Three or four days after I first observed one of the spiders mentioned above, I found she had woven a thick and tight roof to her tower (sealed over like a huge bee cell). This seems to have been done to avoid the impertinent irruption of insects. After the young were hatched and clung in a hideous swarm about her whole body, she paid little attention to the silk tower, and only used the mouth of the den for lurking in in the daytime, head downward and only her eyes and black legs protruding from her clustering progeny of tiny spiders.



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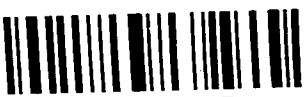
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